Construction IN THE SOUTH

JANUARY 1952

from Sub-Basement to Roof . . . .

PATENT SCAFFOLDING

Can Speed Up Your Work!

"Trouble Saver" Sectional Scaffolding
Gold Medal Suspended Scaffolding
Gold Medal Steel Hoist Towers
Gold Medal Jr. Swinging Scaffolds
"Trouble Saver" Sectional Steel Scaffolding
Gold Medal TubeLox Steel Scaffolding
Gold Medal Steel Sidewalk Bridges

For every job — there's always *one type* of scaffolding that has the edge in safety, efficiency, economy . . . and you'll find it in our complete line of Gold Medal and "Trouble Saver" products.

We make, stock, rent and sell all types of scaffolds for construction, repairs, remodeling and for all sub-contractors. (Just a few are shown here). That's why we can recommend the *best* for your particular job. Our complete stocks at many convenient points mean quick deliveries.

Whatever you're building — look to PATENT . . . *we can scaffold it for you — with the* RIGHT *scaffold.*

Get The Facts! Tell us your scaffolding needs and we'll send you free bulletins of the equipment best for your use.

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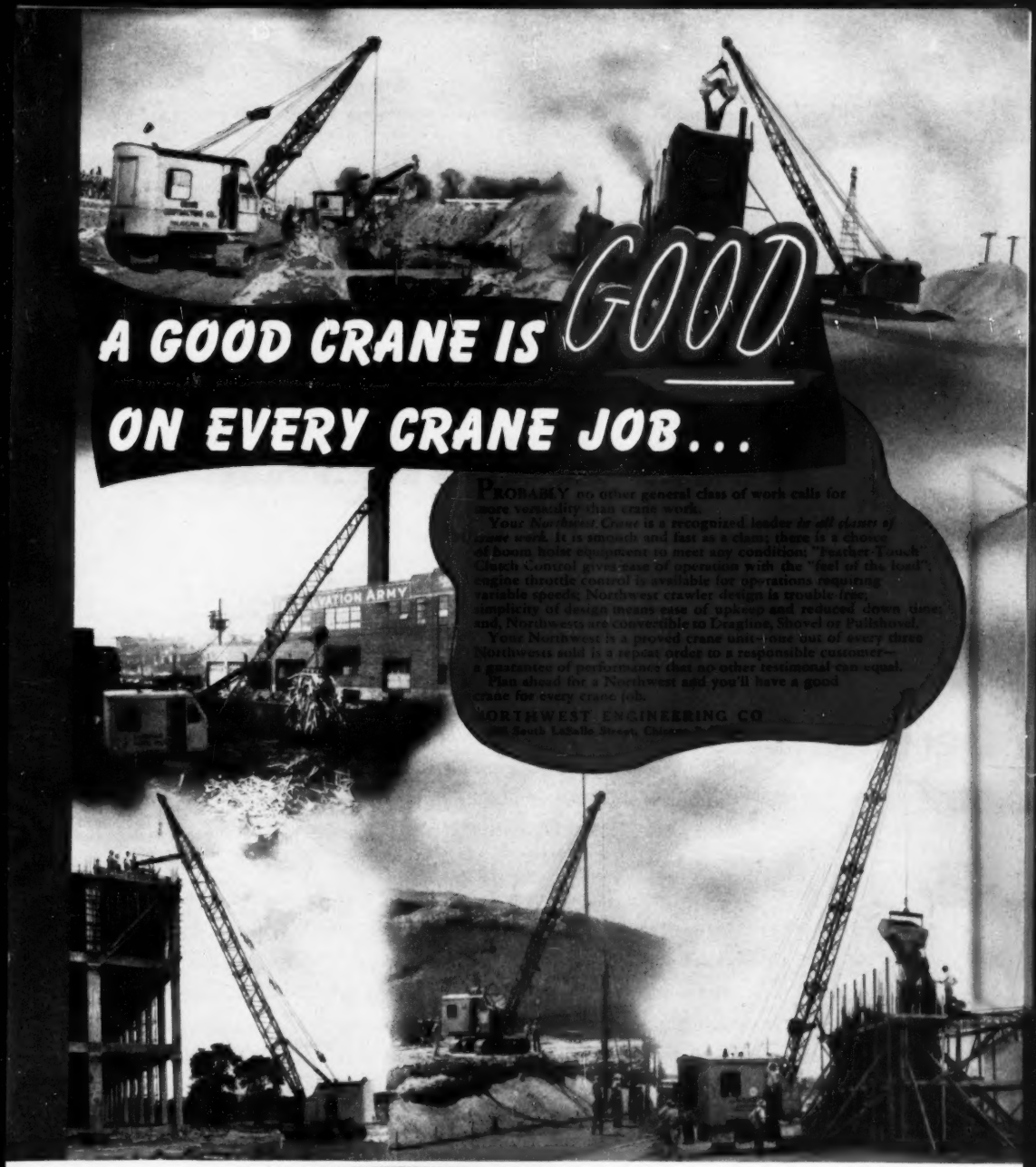
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PROBABLY no other general class of work calls for more versatility than crane work.
Your Northwest Crane is a recognized leader for all classes of crane work. It is smooth and fast as a clam; there is a choice of boom hoist equipment to meet any condition; "Feather-Touch" Clutch Control gives ease of operation with the "feel of the load"; engine throttle control is available for operations requiring variable speeds; Northwest crawler design is trouble-free; simplicity of design means ease of upkeep and reduced down time; and, Northwests are convertible to Dragline, Shovel or Pullshovel.
Your Northwest is a proved crane unit—one out of every three Northwests sold is a repeat order to a responsible customer—a guarantee of performance that no other testimonial can equal.
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Successful Contractors Stay Successful with Proved Equipment

AN OLD FRIEND WITH A NEW NAME

ON JANUARY 1, 1952, Virginia Bridge Company combined with American Bridge Company to become a general operating division of United States Steel Company, to be known as American Bridge Division. This step was taken in the program of simplifying the corporate structure of United States Steel, of which United States Steel Company is a wholly owned subsidiary.

The many friends of Virginia Bridge will be interested to know that from 1889 to 1895 its name was "American Bridge & Iron Company" of Roanoke, Virginia, so that its new name is, in a sense, a return to the old. Under its new name the same individuals in the same offices throughout the South will stand ready to serve you and render assistance at all times. You will receive the same excellent service from our plants as in the past, and we hope the streamlining of our organization will permit us to serve you even better.

AMERICAN BRIDGE

AMERICAN BRIDGE DIVISION, UNITED STATES STEEL COMPANY

ROANOKE BIRMINGHAM MEMPHIS NEW YORK ATLANTA DALLAS

UNITED STATES STEEL

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The CONSTRUCTION magazine is published in four editions: C edition is for North Carolina and South Carolina; S edition, Alabama, Florda, Georgia and Tennessee; N edition, Kentucky, Maryland, Virginia, and West Virginia; W edition, Arkansas, Louisiana, Mississippi, Missouri, Oklahoma, and Texas.

Construction

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Managing Editor

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DAILY CONSTRUCTION BULLETIN
MANUFACTURERS RECORD
BLUE BOOK OF SOUTHERN PROGRESS

BRANCH ADVERTISING OFFICE
R. S. Kendrick, 1430 Clairmont Road, Decatur, Ga. Telephone: Crescent 4577

Record A.E.D. Meet Slated at Chicago

Virtually the entire construction equipment industry appears to be converging on Chicago at the end of this month to attend the 33rd Annual Meeting of Associated Equipment Distributors. As of the end of December, registration for the five-day convention had already reached record proportions, with more than 2,000 persons signed up.

S. F. Laskey, Northwestern Equipment Co., Fargo, N. D., chairman of the 1952 A.E.D. convention committee, said that this figure represented 502 equipment distributing firms and 245 manufacturing companies. The convention will be held at the Conrad Hilton Hotel (formerly the Stevens Hotel), starting on Sunday, January 27, and ending Thursday, January 31, 1952.

Record Crowd Expected

With a record breaking crowd guaranteed, the business sessions of the four-day meeting take on even greater importance. Likewise, the popular "Meet Your Manufacturer" period, scheduled for Tuesday morning, January 29, should increase in value.

For some members the business of the convention will get under way almost immediately. Official delegates of local associations will hold a Local Association Clinic starting at 2:00 p.m. on Sunday afternoon. A meeting is also scheduled for the Board of Directors at 9:30 a.m. on Sunday.

Starts January 28

The official business program of the meeting is scheduled to get under way promptly at 10:30 a.m. on Monday, January 28, with an address by A.E.D. International President R. L. Arnold. Association affairs will take up the first business program, with the reports of association officers, directors and committeemen providing the basis for the meeting. Two of the major items of business will be the introduction of amendments to the By-Laws of A.E.D. by Julian B. Gilman, A.E.D. past president, The William H. Ziegler Co., Minneapolis; and the introduction of proposed resolutions by Maxwell Lyons, Lyons Machinery Co., of Little Rock, Ark.

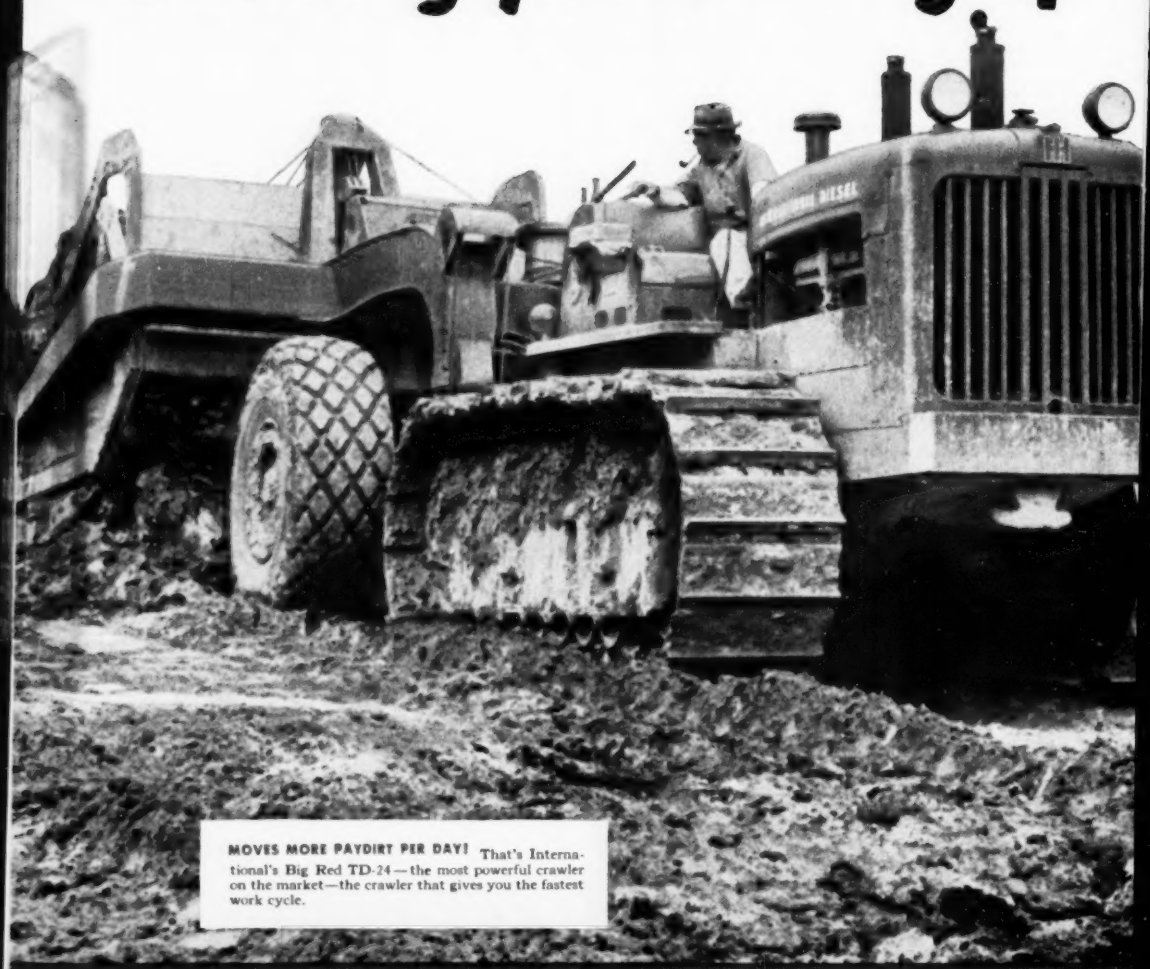
Bennett Featured Speaker

Millard Bennett, a widely known management and sales consultant, will be the featured speaker at the Monday luncheon. Mr. Bennett's talk, which is entitled, "Your Three Golden Keys—to unlock the door to success," provides an introduction to the three basic factors which motivate people—persistency, personality and perceptiveness.

The Monday afternoon session at which A.E.D. Executive Vice-President H. J. Hush will preside, will deal with distributors business problems. Attendance at this session, like the morning session, is restricted to distributor members. Mrs. Marjorie Creim, Bow Lake Equipment Co., Seattle, Wash., is scheduled to be the first speaker. She will be followed on the

(Continued on page 52)

Keep 'em Working
in the big year coming up



MOVES MORE PAYDIRT PER DAY! That's International's Big Red TD-24—the most powerful crawler on the market—the crawler that gives you the fastest work cycle.

Here's help... where and when you need it... with your International Industrial Distributor's ready service and parts departments

Your crawler tractors have to pay off with more work done per day, more days worked per year.

That means speed and power. The ability to stay on the job. Minimum downtime.

And it also means fast maintenance service at your call, when and where you need it.

That's your International Industrial Distributor's service—service that includes

TRAINED "DIESEL DOCTORS"—factory-trained specialists in maintenance and overhaul.

PROMPT FIELD SERVICE at your job site to help keep your equipment working, to get it back to work faster, to cut costly downtime on the spot.

COMPLETE SHOP FACILITIES for major work—you're never far from an International Distributor's shop, no matter where your equipment goes.

QUICK PARTS SUPPLY from your distributor's fully stocked parts department, backed by International Harvester's network of strategically located parts depots (in size and scope, exclusive in the industry).

Isn't this *complete* service a mighty good reason to get International *"Power that Pays"* for the hard-working years ahead?

INTERNATIONAL HARVESTER COMPANY
CHICAGO 1, ILLINOIS

INTERNATIONAL

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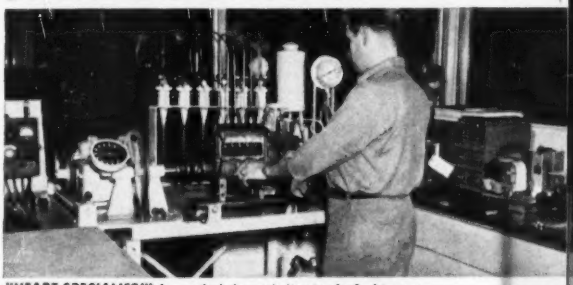
POWER THAT PAYS

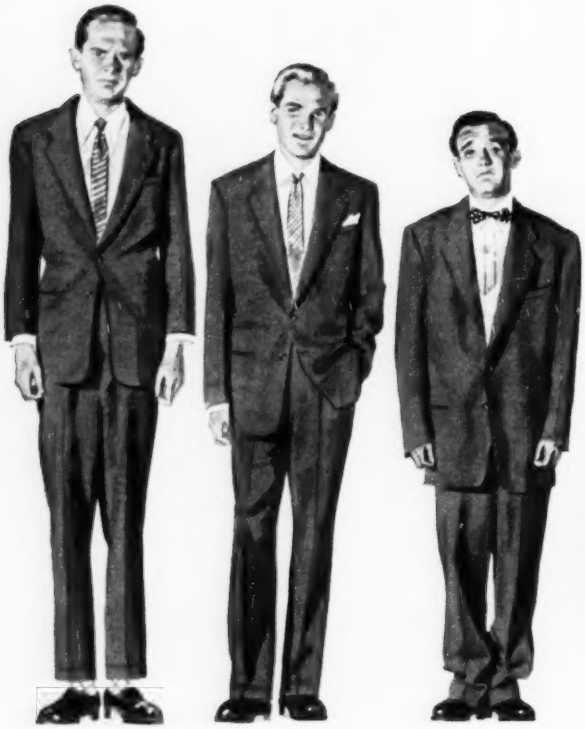
YOU NAME IT—your International Industrial Distributor has it in his big, efficient parts department. And if he hasn't, he can get it fast from his nearby International Parts Depot.



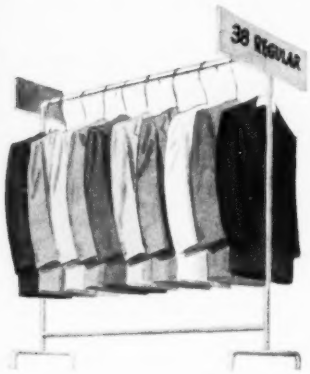
"HEART SPECIALIST!" A crawler's heart is its sturdy fuel pump. It seldom needs attention. When it does, this "diesel doctor" operates with precision instruments in a special dust-free room.

HERE'S HELP WHEN YOU NEED IT. Skilled, experienced mechanics equipped with the right tools for doing major maintenance fast at your International Distributor's shop.

ON THE JOB! Here are an International Distributor's field servicemen, on the job at the job site installing an overhauled transmission. A phone call gets this kind of service.



if all suits were 38 regular



Impossible situation? No, it's just the problem cement users face when using air entrained concrete.

All air entraining cements are standardized by Federal and A.S.T.M. specifications. For many jobs these cements are adequate. They produce a concrete with all the excellent qualities resulting from properly entrained air.

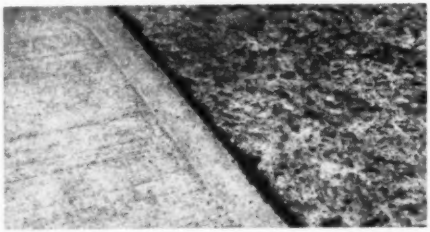
But air entraining cements lack the versatility to be a "cure-all." The local materials used, and the requirements of the locality and the job, are variables that may result in concrete being unsatisfactory when made with standardized air entraining cement.

To avoid a situation like this we recommend the following procedure: Use regular portland cement and add any readily available air entraining agent in the quantity necessary to meet the requirements of your particular job. It's like having your suit tailor made, and it's simple to do.

Always be *sure* an air entraining cement will do the job. If so, remember you can't buy a better one than Hermitage Air Entraining Cement.

★ ★ ★

If you have any problems or questions on the use and mixing of air entrained concrete, the Hermitage Service Engineer will be glad to help and advise you.



Correct air entrainment means a successful job (see slab on left). Too little or too much can be as disastrous as none at all (see slab on right).

Hermitage Cements

Hermitage Portland Cement Company

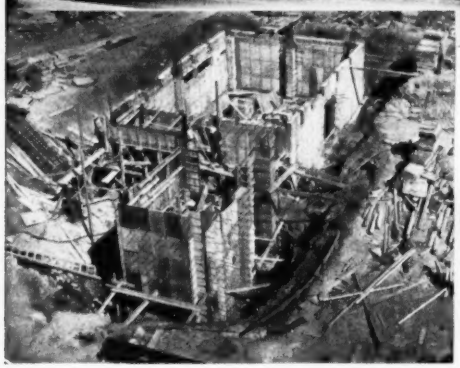
American Trust Building, Nashville 3, Tenn.

Portland • High Early Strength • Air Entraining • Masonry

UNI·FORMS form BIG areas faster...

save labor...save materials!

LINED AND BRACED ON 1 SIDE . . . LEAVES UNOBSTRUCTED WORKING AREA ON OTHER SIDE.



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Faster erection . . . automatically accurate wall widths . . . minimum 1 side alignment and easy adaptability to any forming requirement makes UNI-FORMING the most economical method of forming any type of concrete.

You can form bigger areas, using less man hours and materials with UNI-FORMS . . . steel-framed UNI-FORMS comprise a tight, rigid form that requires no additional structural members.

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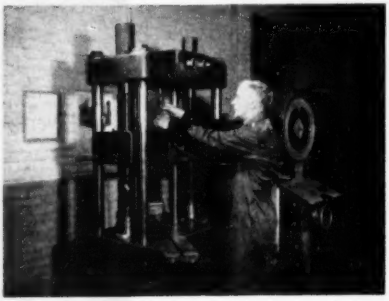
THE INSIDE STORY

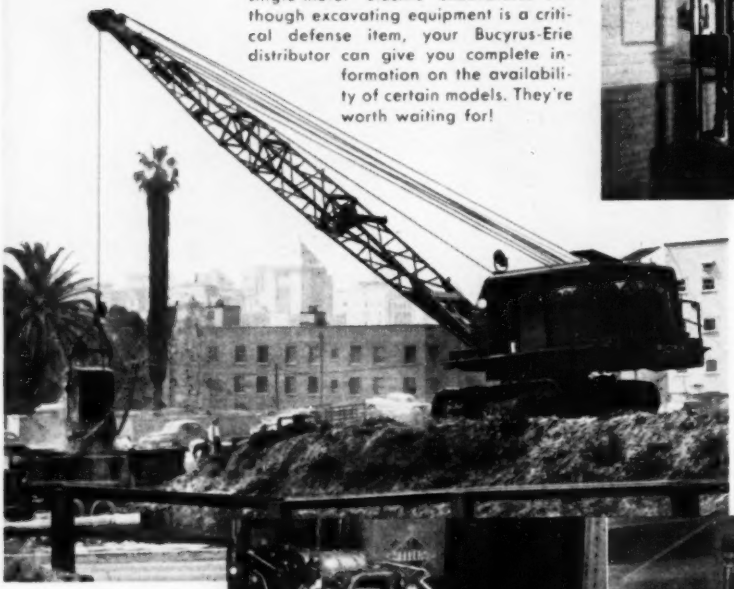
Of Quality Excavators

• "Excavator specialist" engineers are familiar with field problems — can draw on Bucyrus-Erie's 71 years of excavating know-how to design a machine to meet your contracting requirements.

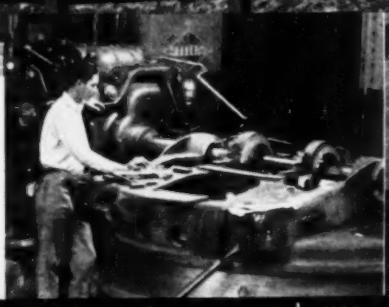
• Here's a finished 1 ½-yd. dragline giving the high output performance typical of the entire Bucyrus-Erie line of ⅜ to 4-yd. gasoline, diesel and single-motor electric excavators. Although excavating equipment is a critical defense item, your Bucyrus-Erie distributor can give you complete information on the availability of certain models. They're worth waiting for!



• All raw materials, whether purchased or produced in Bucyrus-Erie's own foundries, are thoroughly tested in a modern metallurgical laboratory as part of a regular program of quality control.



• The company's foundry produces the rugged castings and alloy steels needed for rough excavating work.



• Talented craftsmen fashion tough gears and shafts with true precision.

305E51

BUCYRUS ERIE

SOUTH MILWAUKEE, WISCONSIN

MOST PREFERRED
MOST COMPARED

Thirty-two Texas Projects Total $5,978,168 in Low Bids

Thirty-two projects totaling $5,978,168 in low bids were covered under the December opening of the Texas State Highway Department. Included were projects in the following counties:

Palo Pinto—US 180, F 382 (4), grading, structures, flexible base and three-course surface treatment, Spencer Construction Co., Carrollton, Texas, $391,836;

Hunt and Hopkins—US 67, FI 800 (7) and FI 431 (6), roadbed treatment, concrete pavement and flexible base shoulders, Tecon Construction Co., Dallas, Texas, $1,186,034;

Lavaca—SH 295, F 903 (10), grading, structures, flexible base and asphalt pavement, The Jarbet Co., Inc., San Antonio, Texas, $466,337;

Van Zandt—FM 1654, S 919 (6), grading, structures, flexible base and asphalt pavement, Joe Davidson, Terrell, Texas, $76,479;

Eastland—SH 16, S 1517 (1), grading and structures, Cage Bros., San Antonio, $197,462;

Taylor—FM 613 & 707, S 1026 (2) & S 1609 (1), grading, structures, base and surface, Stone Construction Co., Ardmore, Oklahoma, $57,038;

Cass & Marion—FM 130 & 1324, S 1738 (1) & S 1742 (1), grading, structures, base and surface and bridge, Dew Construction Co., Tyler, Texas, $93,677;

Cherokee—FM 241, S 1629 (1), grading, structures, base and surface, Moore Brothers Construction Co., Lufkin, Texas, $64,000;

Guadalupe—FM 78, C 25-10-12, widening existing bridges, Norman L. Larson, Austin, $17,565;

Hunt—SH 11 & 34, C 83-1-6 & C 174-1-17, widening and strengthening existing bridges and two-course surface treatment, R. W. McKinney, Nacogdoches, $104,116;

Wilbarger—US 287, C 43-5-27, hot mix asphalt concrete pavement, Texas Bitulithic Co., Dallas, Texas, $53,525;

Hardin—US 96, C 65-5-32, grading, structures, reconditioning flexible base and asphalt pavement, W. R. Boyd, Inc., Cushing, Texas, $77,774;

Hill—US 81, C 14-7-22, widening and resurfacing with hot mix asphalt concrete pavement, Public Construction Co., Denton, Texas, $259,180;

Culberson, Jeff Davis and Presidio—US 90, C 20-1-7, C 20-2-5, C 20-3-4, C 20-4-4, C 20-5-4, C 20-6-3 and C 20-7-7, seal coat, Hugh McMillan, El Paso, Texas, $75,645;

Dallas—US 80, FI 526 (9), grading, structures, roadbed treatment and concrete pavement, Uvalde Construction Co. & J. T. Leslie, Dallas and Waxahachie, Texas, $258,487;

Wheeler—US 66, FI 547 (13), flexible base and two-course surface treatment, J. R. Fanning, Lubbock, Texas, $335,890;

Travis and Bastrop—SH 20, F 478 (8), F 211 (3), F 187 (14) & F 187 (15), grading, structures, flexible base and asphalt surface treatment, Collins Construction Co. of Texas, $305,593;

Terry and Lynn—US 380, F 1096 (1) & (2), grading, flexible base and three-course surface treatment, J. R. Fanning, Lubbock, $126,511;

Harrison and Marion—US 59, F 192 (6) & F 306 (3), Little Cypress Creek bridge and approaches, grading, structures, flexible base and surfacing, R. C. Buckner, Jacksonville, Texas, $314,292;

Guadalupe—SH 3, F 35 (4), grading, structures, foundation course flexible base & two-course surface treatment, Holland Page, Austin, Texas, $321,660;

Dimmit—FM 1684, S 1705 (2), grading, structures, base and surfacing, Thomas & Ratliff, Rogers, Texas, $62,576;

La Salle—FM 1684, S 1705 (1), grading, structures, base and surfacing, Thomas & Ratliff, Rogers, Texas, $66,176;

Milam—FM 486, C 337-5-2, Little River bridge and approaches, John F. Buckner & Son, Cleburne, Texas, $49,801;

Maverick—FM 1589, Elm Creek bridge and approacbhes, John F. Buckner & Son, Cleburne, Texas, $27,796;

Waller and Harris—US 290, C 50-5, 8 & 9, 17, 8 & 9, hot mix asphalt concrete pavement, Gulf Bitulithic, Houston, Texas, $178,695;

Howard—US 80, C 5-6-18, grading, widening structures, flexible base and asphalt pavement, Ernest Loyd, Fort Worth, Texas, $72,558;

Bosque—SH 353, C 519-3-3, grading, structures & roadbed treatment, Callan Construction, Waco, Texas, $114,588;

Hopkins—SH 11, C 83-2-15, widening & strengthening existing base & two-course surface treatment, Ernest Loyd, Fort Worth, Texas, $119,305;

Brewster—US 90 & SH 118, C 21-2, 3, 4, 11, 12, 8 & 6 & C 358-3 & 4-7 & 3, seal soat, C. Hunter Strain, San Angelo, Texas, $69,832;

McMullen—SH 173, C 517-2 & 3-7 & 6, seal coat, Thomas & Ratliff, Rogers, Texas, $31,330;

Jeff Davis and Presidio—SH 17, US 67, SH 118 & SH 166, C 104-3-13, C 104-7-6, C 104-8-9, C 415-1-10 & C 415-2-8, seal coat, Hugh McMillan, El Paso, Texas, $49,905;

Dallas—US 75, C 47-7-33, street improvements, storm sewers and U/B, Ben Sira & Co., Dallas, Texas, $352,489.

Quiet Trinity Valley Now Busy Construction Scene

A small army of workmen has taken over a once peaceful valley in the upper reaches of the Trinity watershed, and here, amid the sound of earth movers, dump trucks, and earth rollers, the Garza-Little Elm Dam is taking shape.

Hardly more than three years ago the Elm Fork of the Trinity River passed undisturbed through this quiet valley. And a placid stream it seemed, indeed, as it flowed between its tree-shaded banks to join the main stream of the Trinity on its long southerly trek to the Gulf of Mexico.

But sometimes this tributary was turbulent, too—overflowing its banks and causing damage and destruction downstream reckoned in the hundreds of thousands of dollars, or even more.

So, to protect rich farmlands and growing cities lying below from floods, and to conserve water to meet the needs of rapidly-growing neighboring areas, Congress authorized construction of the Garza-Little Elm Dam and Reservoir project by the Corps of Engineers. In November 1948 the first construction contract was initiated. Now, three years and many thousands of work hours later, the overall project stands one fourth complete. It is slated to be finished in 1954.

At the present time, work is underway at full tilt on three separate activities: (1) Construction of the three-mile-long east portion of the earthen embankment and excavation of the spillway section, under a $1,850,000 contract held by T. C. Cage and Dean Skinner of Austin, Texas; (2) Construction of a second portion of the west embankment, a $573,505 undertaking by Joe W. Hendrix of Shreveport, La.; and (3) a $1,578,732 project being accomplished by Texas Construction Co. of Dallas, Texas, under which the outlet works are to be constructed.

Most nearly finished is the Cage and Skinner embankment contract, on which work was begun early in 1950.

Embankment yardage in this portion of the project totals 3,250,000.

Stone rip-rap, obtained from near Bridgeport, Texas, is being placed on the upstream slope of the embankment to protect the structure from wave action and erosion once the reservoir is filled. In all, some 114,500 cubic yards (or approximately 171,000 tons) will be placed under this and a previous contract with the Cage and Skinner firm.

Under this previous contract with Cage and Skinner—a $142,900 undertaking—the first portion of the west embankment was completed more than two years ago. This was the initial phase of construction at Garza-Little Elm.

Excavation for the spillway and runoff channel, a part of Cage and Skinner's current work contract, has been completed, and final grading is underway.

Approximately 3,473,500 cubic yards of earth was removed in this undertaking, a large portion of which went into the earth embankment.

Construction of the 560-foot-long concrete emergency spillway will be accomplished under a contract scheduled to be advertised in 1952.

Newest undertaking at the Garza-Little Elm project is Texas Construction Company's work toward the construction of the outlet works—which will consist of a concrete and steel tower in the reservoir connected to the top of the dam embankment by a steel service bridge. In the base of this structure will be three gate controlled intakes, each measuring 6.5 by 13 feet, for release of water from the reservoir through a 16-foot-diameter circular discharge conduit.

Work has not yet been started on the outlet works proper. Under supervision of the Fort Worth District, Corps of Engineers, Texas Construction Company at the present time is engaged in the excavation of a long trench or ditch called an "inspection trench" over which the

(Continued on page 16)

Railroad Terminal Board Notes Crossing Progress

New Orleans, which is in the midst of its multi-million-dollar union station project, has finished four of the required overpasses and has eighteen other crossings in various stages, in addition to the street improvements required in connection with the extensive undertaking.

The completed spans are at Elysian Fields Avenue and at North Broad Avenue, both at the intersection with the New Orleans Terminal Company Railroad, and at North Claiborne Avenue and at North Galvez Street, over the New Orleans & Northeastern Railroad.

Other grade separations are now under way in two locations on Franklin Avenue at Jefferson Davis Parkway, South Carrollton Avenue, South Broad Avenue, Canal Boulevard, City Park Avenue, Gentilly Boulevard, Marconi Drive, Palmetto Street, Paris Avenue, two crossings on Ponchartrain Boulevard, St. Bernard Avenue, Burma Road, Leonidas Street, Wisner Boulevard and South Claiborne Avenue.

Three stretches of Saratoga Street, Calliope Street and an extension, Poydras Street, and construction of a route for the Louisiana and Nashville Railroad through the Press Street yard area are also part of the work.

The progress report issued by the New Orleans Railroad Terminal Board indicates the following status of the various projects early last month:

Section I—Grade Separation Program

Elysian Fields Ave.-New Orleans Terminal Railroad—overpass: Opened January 10, 1950; design by Bernard, Godat & Heft; supervision by G. A. Hert & Co.; contractor, R. P. Farnsworth & Co.;

North Broad Ave.-New Orleans Terminal Railroad—underpass: Opened Sept. 23, 1951; design by Godat & Heft. (G. A. Heft & Co., assignee); supervision by David W. Godat & Assoc.; contractor, R. P. Farnsworth & Co.; project is complete except for installation of pumps for underpass drainage system and landscaping.

North Claiborne Ave.-New Orleans & Northeastern Railroad — Overpass: opened March 7, 1951; design and supervision by T. Ed. Ernst; contractors, Boh Brothers Construction Co.;

North Galvez St.-New Orleans & Northeastern Railroad — overpass: Opened February 28th, 1951; design and supervision by Fromherz Engineers; contractor, R. P. Farnsworth & Co.;

Franklin Ave.-New Orleans Terminal Railroad — Overpass: Construction started March 1st, 1951; Design and supervision by D. W. Godat & Assoc.; Contractor, Keller Construction Co.; 60 per cent complete;

Franklin Ave.-Louisville & Nashville Railroad — Underpass: Construction started March 1st, 1951; Design and supervision by D. W. Godat & Assoc.; contractor, Keller Construction Co.; 60 per cent complete;

Jefferson Davis Parkway-Union Passenger Terminal Railroad — Overpass: General construction started January 15, 1951. Work was stopped on June 12, 1951 due to non-delivery of structural steel; resume operations; Design and supervision by T. Ed. Ernst; contractor, Boh Bros. Const. Co.; 55 per cent complete;

South Carrollton Ave.-Union Passenger Terminal Railroad — Underpass: Construction started Januray 2, 1951; delayed due to non-delivery of structural steel; scheduled to resume; Design and Supervision by B. M. Dornblatt & Assoc.; contractor, R. P. Farnsworth & Co.; 40 per cent complete;

South Broad Avenue

South Broad Ave.-Union Passenger Terminal Railroad—Overpass: Construction started June 18, 1951; Design & supervision by G. A. Heft & Co.; Contractor, Farnsworth & Chambers, Inc.; 20 per cent complete;

Canal Boulevard-New Orleans Terminal Railroad — Underpass: Construction started June 11, 1951; Design and supervision by Fromherz Engineers; Contractor, Keller Construction Co.; 15 per cent complete;

City Park Ave.-Union Passenger Railroad—Underpass: Contract for the engineering design and supervision effected last January; preliminary engineering report due; design and supervision by B. M. Dornblatt & Assoc.;

Gentilly Blvd.-New Orleans Terminal Company Railroad — Underpass: Bids opened December 28; Construction to start in January; design by Godat & Heft & G. A. Heft & Co. (Assignee); supervision by G. A. Heft & Co.

Marconi Drive-New Orleans Terminal Railroad—Underpass: Contract for driving and load testing of test piles has been executed; Design and supervision by D. W. Godat & Assoc.; final plans and specifications submitted;

Palmetto St.-Union Passenger Terminal Railroad—Overpass: Driving of test piles completed; realtors designated to acquire for right of way; Design and Supervision by D. W. Godat & Assoc; plans and specifications are expected to be completed during January 1952;

Paris Ave.-New Orleans Terminal Railroad—Underpass: Contract for driving and load testing of test piles executed; works starting December 1951; design and supervision by G. A. Heft & Co.;

Pontchartrain Blvd.-Union Passenger Terminal Railroad—Underpass: pending Louisiana action on Pontchartrain Expressway;

Pontchartrain Blvd.-New Orleans Terminal Railroad—Underpass: Plans and specifications are expected to be completed during January 1952; design and supervision by B. M. Dornblatt & Assoc.;

St. Bernard Ave.-New Orleans Terminal Railroad—Underpass: Contract for driving and Load Testing piles has been executed; design by Godat & Heft and G. A. Heft & Co. (Assignee); supervision by G. A. Heft & Co.;

Burma Road-Louisville & Nashville Railroad—Overpass: Design and supervision by G. A. Heft & Co.;

Leonidas St.-Union Passenger Terminal Railroad—Underpass: pending Louisiana action on Pontchartrain Expressway;

Wisner Blvd.-New Orleans Terminal Railroad—Underpass: Contracts for driving and load testing test piles has been executed; design and supervision by G. A. Heft & Co.;

South Claiborne Ave.-Union Passenger Terminal Railroad—Overpass: Louisiana Highway Department Project. Construction expected to be started early in 1952.

Section II—Street Improvements

Saratoga Street Widening from Tulane to Poydras Street (phase 1); complete except for lighting system;

Saratoga Street—Widening and paving from Poydras to Julia Street (phase 2); bids have been received for the subsurface drainage and paving from Poydras to Girod Street; low bidders, R. P. Farnsworth & Co. and Boh Bros. Construction Co. respectively; acquisition and clearing of remaining property required for right of way nearing completion;

Saratoga Street Widening and Paving from Julia Street to Calliope St. (through UPT PLAZA) (phase 3); Construction section cannot be accomplished until new station has been completed and existing union station demolished;

Calliope Street—Widening and partial paving from South Rampart to South Claiborne (phase 1); Partial installation of sub-surface drainage and paving completed, additional installations in progress; property required for widening by City acquired; widening by State has not been started;

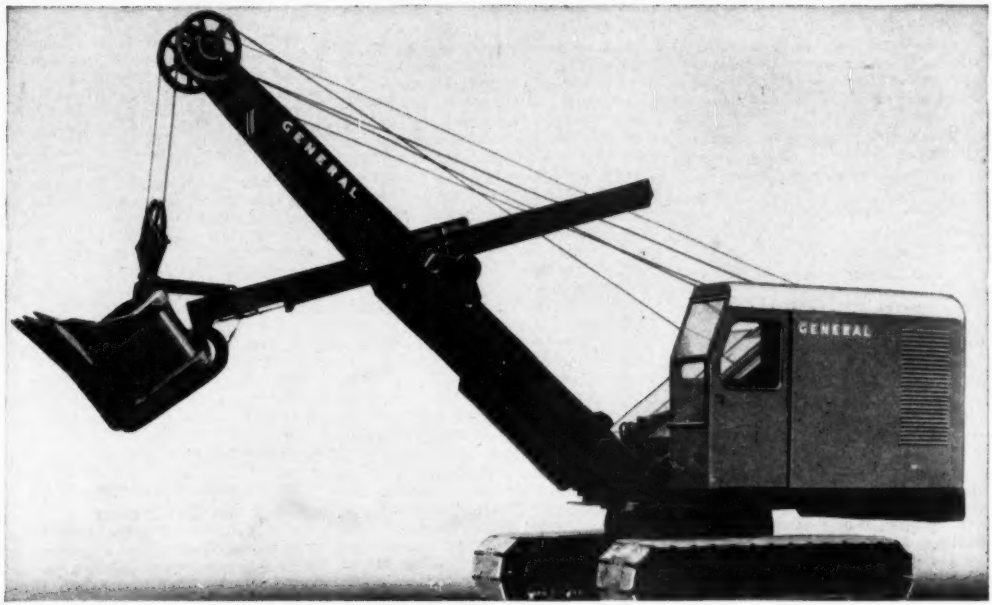
Calliope Street Extension — Widening and Paving from South Broad Ave. to South Carrollton Avenue; Construction cannot be accomplished until after consolidation of railroad operation in New Union Passenger Terminal, when I.C. RR will discontinue passenger train operations on this route.

Poydras Street—Widening and Paving (phase 1) South Galvez to South Broad Ave.; bids received for sub-surface drainage and paving of north side roadway. Low bidders Argus & Fresh and A. N. Goldberg Inc. respectively; work is approximately 75 per cent completed.

Section II—Miscellaneous

Construction of a Railroad Route for the L&H Railroad through the Press Street Yard Area. Right-of-way acquisition progressing satisfactorially.

GENERAL



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Oklahoma Highway Awards Amount to $2,113,945

Contracts on 59.921 miles of paving and 5.707 miles of grading, drainage and bridges were awarded by the Oklahoma State Highway Commission in December at $2,113,945, or 6.12 per cent less than the cost estimates.

John Erts Construction Co., Oklahoma City, and Smith Brothers of Noble, divided the biggest project, a 4-section job of 19.409 miles of blended asphalt paving on State Highway 9 in Hughes and McIntosh counties.

The award leaves only 31 unimproved miles to be rebuilt on the 270 miles the highway runs from the Arkansas boundary on the east to the Texas boundary on the west.

The commission has turned more than 100 miles of gravel and dirt into paving on this road during the past five years.

Most successful bidder was Myron Groseclose, of Bethany, low on 29.101 miles of paving at $604,355 at approximately $52,000 under estimated costs.

Honegger Brothers, of Kingfisher, nosed out the Poston Construction Co. of Lawton by $70 on a 5.546 Logan-Kingfisher county roadbed job on S.H. 51.

Awards follow:

Payne County—RC-91 (2), S.H. 40, repair and refloor Cimarron river bridge south of Perkins, estimated cost, $31,820; Lee Harris, Cushing, $25,864;

Cherokee County—S-181 (3) SH, Pt. 1 Surf, S.H. 82, 6.511 miles 6-inch stabilized aggregate base 28 feet wide, 22-foot double bituminous paving, 3-foot primed shoulders from Tahlequah north and west, estimated cost $114,998; Lyles & Buckner, Inc., Muskogee, $111,184;

Cherokee County—S-181 (3) SH, Pt. 2 Surf, S.H. 82, 3.234 miles 6-inch stabilized aggregate base 28 feet wide, 22-foot double bituminous paving, from 6.558 miles north and west of Tahlequah, northeast through Gideon, estimated cost, $61,754; Lyles & Buckner, $59,908;

Bryan County—MC-301 (1), S.H. 299, joint project with Texas State Highway Commission, clean and paint 2,109-foot steel bridge on Red river leading into Fannin county, Texas, estimated cost $21,800, each state paying one-half of contract price; Randall Sharpe, Lubbock, Texas, $15,597;

Kingfisher-Logan Counties—F-357 (5) Rdy., S.H. 51, 5.546 miles 36-foot roadbed from 8.126 miles east of US Highway 81, extending east, estimated cost, $110,013; Honegger Brothers, Kingfisher, $88,112;

Kingfisher-Logan Counties—F-357 (5) Br., S.H. 51, 75-foot concrete slab span bridge on Horse creek, three reinforced concrete culverts, combined length, .031 of a mile on above location, estimated cost, $82,284; H. R. Landt, Oklahoma City, $75,132;

Cimarron County—F-600 (2) Rdy., U.S. 287, 1.026 miles 40-foot roadbed, 10-inch caliche base, 24-foot double bituminous paving, 2-foot single bituminous shoulders approximately 12 miles southeast of Boise City, extending southeast, estimated cost, $59,590; Broce Construction Co., Woodward, $46,231;

Cimarron County—F-600 (2) Br., U.S. 287, .132 of a mile for 700-foot concrete girder span bridge on Beaver river on above location, estimated cost, $270,750; Park-Ward Co., Oklahoma City, $230,725;

Hughes County—SAP-884 (2), S.H. 9, 5.904 miles 8-inch soil sub-base, 10-inch stabilized aggregate base 36 feet wide, 24-foot blended asphalt paving, 6-foot single bituminous paved shoulders east of Dustin extending west, estimated cost, $272,748; John Erts Construction Co., Oklahoma City, $287,184;

Hughes County—SAP-884 (2), Pt. 2 Surf, S.H. 9, 2.248 miles 8-inch soil sub-base, 10-inch stabilized aggregate base 36 feet wide, 24-foot blended asphalt paving, from west of Hughes-McIntosh county line, extending west into Hughes county, estimated cost, $95,949; Erts Co., $100,401;

Hughes-McIntosh Counties—SAP-885 (4), Pt. 1 Surf, S.H. 9, 5.316 miles 8-inch soil sub-base, 10-inch stabilized aggregate base 36 feet wide, 24-foot blended asphalt paving, from west of Hughes-McIntosh county line extending east into McIntosh county, estimated cost $231,991; Smith Brothers, Noble, $229,038;

McIntosh County—SAP-885 (4), Pt. 2 Surf, S.H. 9, 5.611 miles 8-inch soil sub-base, 10-inch stabilized aggregate base 36 feet wide, 24-foot blended asphalt paving, from 5.2 miles east of Hughes-McIntosh county line extending east into McIntosh county, estimated cost, $243,534; Smith Brothers, $240,447;

Marshall County—SAP-926 (4), Pt. 1 Surf, S.H. 199, 6.851 miles 8-inch soil sub-base, 10-inch stabilized aggregate base 26 feet wide, 24-foot double bituminous paving from Marshall-Bryan county line west, estimated cost, $117,369; Myron Groseclose, Bethany, $164,617;

Bryan County—SAP-926 (4), Pt. 2 Surf, S.H. 199, 4.843 miles 8-inch soil sub-base, 10-inch stabilized aggregate base 26 feet wide, 24-foot double bituminous paving from S.H. 299, west, estimated cost, $132,791; Myron Groseclose, $123,228;

Cleveland County—SAP-1057 (2), Pt. 1, S.H. 39, 4.026 miles 8-inch soil base, 8-inch stabilized base 22 feet wide, 22-foot single bituminous paving from 7 miles east of Lexington, extending east, estimated cost, $77,863; Myron Groseclose, $71,200;

Cleveland-Pottawatomie Counties—SAP-1057 (2), Pt. 2, S.H. 39, 7.391 miles 8-inch soil base, 8-inch stabilized base 22 feet wide, 22-foot single bituminous paving, from 11 miles east of Lexington, extending east into Pottawatomie county, estimated cost, $146,626; Myron Groseclose, $134,405;

Pottawatomie County—SAP-1057 (2), Pt. 3, S.H. 39, 5.990 miles 8-inch soil base, 8-inch stabilized base 22 feet wide, 22-foot single bituminous paving, from 18.5 mles east of Lexington, extending east to Asher, Pottawatomie county, estimated cost, $119,901; Myron Groseclose, $110,666;

Carter County—SAP-1082 (2), S.H. 77A, 2.042 miles 40-foot roadbed, 8-inch soil base, 7-inch stabilized aggregate base 32 feet wide, 22-foot blended asphalt paving, 5-foot single bituminous paved shoulders, estimated cost, $125,785; project cancelled because right-of-way not cleared.

Missouri Spent $33,791,109 for Highway Improvements

The Missouri State Highway Commission last year awarded contracts totaling $33,791,109 for improvements on the state highway system. Of the total, $24,897,494 was for work on the major system and $8,893,615 for improvements on the supplementary, or farm-to-market system.

Mileages of various types, as released by the office of Rex M. Whitton, chief engineer of the Missouri department, are:

On the major system, 15.227 miles of graded earth; 1.112 miles of granular; 178.283 miles of low type bituminous; 235.316 miles of high type bituminous, and 99.751 miles of portland cement concrete.

On the supplementary system, the improvements were for: 122.965 miles of graded earth; 501.889 miles of granular; 178.218 miles of low type bituminous; 13.641 miles of oiled earth; 2.066 miles of high type bituminous and 7.027 miles of portland cement concrete.

Maintenance expenditures in 1951, says G. M. Threlkeld, of Mr. Whitton's office, approximated $14,000,000, the same amount that has been approved for the current year.

Approximately $1,776,477 was spent last year for equipment. Estimates place the expenditure this year at $2,300,000.

While the tentative program for 1952 aggregates about $26,700,000, $8,000,000 of which would be on the supplementary system, no definite figure will be set until after the state legislature meets.

Paving Completions High in Oklahoma

More than one half of the 185.817 miles of highway construction completed in Oklahoma during November was paving.

State Director C. A. Stoldt says 99.771 of hard surfacing was finished.

The remaining 86.046 miles includes 18.120 miles of gravel surfaced county roads, roadbed and bridge construction.

Cost of the November work was $5,513,393, the director said, the second time this year that completed construction exceeded the $5 million mark.

In August completed work amounted to $5,697,080 on 203.210 miles of construction.

Major November completions from the standpoint of mileage and cost follow:

Canadian County—U.S. 66, 5.946 miles 4-lane roadbed, paving, bridges, $1,106,992;

Oklahoma County—U.S. 66, by-pass, 6.194 miles 4-lane roadbed, $528,898;

Osage County—S.H. 20, 15.591 miles paving, $401,214;

Custer-Roger Mills Counties—S.H. 34, 12.139 miles roadbed, paving, $327,057;

Jefferson County—S.H. 32, 11.025 miles paving, $237,069;

McIntosh County—S.H. 9, 5.053 miles roadbed, paving, $236,780;

Okmulgee County—County road, .293 mile of gravel surface, bridge, $198,398;

Blaine County—S.H. 58, 9.376 miles roadbed, paving, $185,960;

Alfalfa-Major Counties—S.H. 8, 13.435 miles roadbed, bridges, $167,317;

Beaver County—S.H. 3, 16.928 miles roadbed, $106,749.

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$4,074,524 Missouri Road Awards Made in December

The Missouri State Highway Commission last month let contracts totaling $4,074,524. Located in fifteen counties, the projects included the following:

Platte—Route 71, F-96 (3)-A, 4.448 miles of graded earth, culverts, bridge and portland cement concrete pavement 24 feet wide, Bushman Construction Co., St. Joseph, $463,398;

Platte—Route 71, F-96 (3)-B, 2.057 miles graded earth, culverts, bridge and portland cement concrete pavement 24 feet wide and part of two lanes 24 feet wide, Bushman Construction Co., St. Joseph, $397,260;

Phelps—Route 66, FI-176 (21)-A, 1.631 miles graded earth, culverts, portland cement concrete pavement, Perry McGlone Construction Co., Kansas City, $172,125;

Phelps—Route 66, Project FI-176 (21)-B 4.369 miles graded earth, culverts, portland cement concrete pavement 24 feet wide, Perry McGlone Construction Co., Kansas City, $522,225;

Monroe-Marion-Ralls—Route 36, F-252 (11) b-A, 2.988 miles asphaltic concrete pavement 24 feet wide, Bridges Paving Co., St. Louis, Mo., $23,458;

Monroe-Marion-Ralls—Route 36, F-252 (11) b-B, 2.988 miles asphaltic concrete pavement 24 feet wide, Bridges Paving Co., St. Louis, $60,197;

Marion-Ralls — Route 36, F-252 (12), 2.265 miles asphaltic concrete pavement, 24 feet wide, Bridges Paving Co., St. Louis, $45,959;

Marion—Route 36, F-62 (2) b, 2.74 miles asphaltic concrete pavement 24 feet wide, Bridges Paving Co., St. Louis, $55,895;

Monroe—Route 15, Sec. 28-E, 2.112 miles asphaltic concrete pavement 20 feet wide, Bridges Paving Co., St. Louis, $44,464;

Monroe — Route 24, Sec. 50-A, 4.558 miles asphaltic concrete pavement 20 feet wide, Bridges Paving Co., St. Louis, $92,607;

Monroe — Route 24, Sec. 51-A, 4.202 miles asphaltic concrete pavement 20 feet wide, Bridges Paving Co., St. Louis, $83,777;

Monroe—Route 24, Sec. 53-D, 4.981 miles asphaltic concrete pavement 20 feet wide, Bridges Paving Co., St. Louis, $101,155;

Monroe—Route 24, Sec. 24,-B, 4.981 miles asphaltic concrete pavement 20 feet wide, Bridges Paving Co., St. Louis, $102,164;

Cole—Route 63, Sec. 46-A, widening and asphaltic concrete pavement 24 feet wide, 2.834 miles, Granite Bituminous Paving Co., St. Louis, $112,843;

Cole — Route 63, Sec. 47, 4.278 miles widening and asphaltic concrete pavement 24 feet wide, Granite Bituminous Paving Co., St. Louis, $172,405;

Cole — Route 63, Sec. 48, 2.901 miles widening and asphaltic concrete pavement, 24 feet wide, Granite Bituminous Paving Co., St. Louis, $117,485;

Osage—Route 63, Project Sec. 49-A, 4.419 miles asphaltic concrete pavement, 20 feet wide, Granite Bituminous Paving Co., St. Louis, $70,541;

Osage—Route 50, Sec. 37-B, 3.66 miles widening and asphaltic concrete pavement, 22 feet wide, Granite Bituminous Paving Co., St. Louis, $108,858;

Jackson—Route 71 by-pass, Sec. 11-A, 4.55 miles widening and asphaltic concrete pavement, 24 feet wide, Midwest PreCote Co., Kansas City, $180,109;

Cass—Route 71 by-pass, Sec. 12-A, 2.577 miles widening and asphaltic concrete pavement, 24 feet wide, Midwest PreCote Co., Kansas City, $141,232;

Jackson—Route 50, Sec. 8-A, 1.214 miles widening and asphaltic concrete pavement, 22 feet wide, Midwest PreCote Co., Kansas City, $40,154;

Jackson—Route 50, Sec. 9-A, 3.460 miles asphaltic concrete pavement, 22 feet wide, Midwest PreCote Co., Kansas City, $92,253;

Cass—Route 71 by-pass, Sec. 13-A, 2.524 miles widening and asphaltic concrete pavement, 24 feet wide, Payne & Dolan, Inc., Chicago, Ill., $106,676;

Cass—Route 71 by-pass, Sec. 14, 2.855 miles widening and asphaltic concrete pavement, 24 feet wide, Payne & Dolan, Inc., Chicago, Ill., $121,472;

Cass—Route 71 by-pass Sec. 15, 3.299 miles widening and asphaltic concrete pavement, 24 feet wide, Payne & Dolan, Inc., Chicago, Ill., $145,050;

Jasper—Route 66, F-2, 1.609 miles graded earth, culverts and portland cement concrete pavement, 24 feet wide, Atkinson Windle Co., Chillicothe, Mo., $191,618;

Knox — Route SV, S-460 (3)-A, 3.053 miles graded earth, culverts, gravel or crushed stone surfaced, Atkinson Windle Co., Chillicothe, $22,008;

Knox—Route SV, S-460 (3)-B, 4.207 miles graded earth, culverts, bridges, gravel or crushed stone surface, Atkinson Windle Co., Chillicothe, $104,822;

Pulaski—Route SO, S-1201 (1)-A, 2.846 miles graded earth, culverts, bridge, gravel or crushed stone surface, Carte Brothers Construction Co., Inc., West Plains, Mo., $38,576;

Pulaski—Route SO, S-1201 (1)-B, 2.388 miles graded earth, culverts, gravel or crushed stone surface, Carte Brothers Construction Co., Inc., West Plains, $18,894;

Lafayette — Route SFF, S-748 (1)-A, 4.681 miles graded earth, culverts, gravel or crushed stone surface, Howard Construction Co., Sedalia, $33,049;

Grundy—Route SB, S-1146 (1) a, 3.446 miles graded earth, culverts, Everett R. Elsea, Kirksville, $14,604;

Grundy—Route SK, S-771 (1) a, 4.208 miles graded earth, culverts, Everett R. Elsea, Kirksville, $14,266;

Bates—Route 71, Sec. 70-B2, steel and incidental items, Kansas City Structural Steel Co., Kansas City, Kans., $8,139;

Bates—Route Sb, Sec. 1-B, steel and incidental items, Kansas City Structural Steel Co., Kansas City, Kans., $27,841;

Lafayette—Route 13, Sec. 20, steel and incidental items, St. Joseph Structural Steel Co., St. Joseph, Mo., $26,930.

Low Bidders Listed for Mid-December Opening

The Louisiana State Highway Department at its mid-December bid opening received proposals for projects in the following parishes:

Cameron — 9.604 miles 20-foot bituminous surface treatment (cut back asphalt), Cameron-Creole highway State Routes 42 and 292; W. R. Aldrich & Co., Baton Rouge, $547,426;

Rapides—.106 of a mile of 8-inch uniform Portland cement concrete pavement, Pineville levee ramp, State Route No. 14; Burke & Kingston, Inc., New Iberia, $12,320;

Tangipahoa—8.695 miles gravel base course or as alternate soil cement base course and bituminous surface treatment (asphalt cement), Hammond-Loranger highway, State Route 2021; W. H. Patterson & Co., Baton Rouge, $252,115;

Livingston—4.4 miles of washed gravel surface course, public roads in Project 703-09-02; Amite Sand & Gravel Co., Inc., Baton Rouge, $4,604;

Tangipahoa—24 miles washed gravel spot-dumped under Project 703-09-16; Independence Sand & Gravel Co., Independence, La., $2,010;

Morehouse—13.5 miles washed gravel spot-dumped on public roads under Project 703-09-18; Howard C. White, Lake Providence, La., $12,850;

Bossier—Furnishing washed gravel under Project 703-09-22, items 1, 2 and 3, Meriwether Supply Corp., Shreveport, $6,916; item 4, Braswell Sand & Gravel Co., Inc., Minden, $6,300;

Tangipahoa—6 miles washed gravel, public roads under Project 703-09-24; J. J. Rogers Gravel Co., Tickfaw, La., $1,115;

Iberville—washed gravel spot-dumped on public roads under Purchase Requisition 2426A; Feliciana Sand & Gravel Co., Jackson, La., $29,376;

Iberville — washed gravel spot-dumped on public roads under Purchase Requisition 2426A; Feliciana Sand & Gravel Co., Jackson, La., $23,457;

Ascension and East Baton Rouge—6.907 miles Portland cement concrete pavement, Project 7-08-402 and 7-09-15, Bayou Manchac-Nesser Highway, State Route 1500; T. L. James & Co., Inc., Ruston, La., $1,114,203.

Trinity Construction Scene

(Continued from page 11)

dam will be built.

This trench extends from the end of the east portion of the embankment now being completed by Cage and Skinner westward to the banks of the Elm Fork. The Joe W. Hendrix firm has completed a similar trench at its construction site west of the stream.

Purpose of this ditch or trench is to prevent possible seepage from the reservoir through the dam foundation.

The first step in preparing this inspection trench is the excavation of pervious, subsurface material and water-bearing gravel. The area is cleared by dozers and material is removed from the trench in clamshell and drag buckets.

Depth to which the ditch is excavated is determined by the depth this pervious material extends before an impervious, clay-like shale base is reached. It usually goes to a depth of about 14 feet, although in some places it has extended as

(Continued on page 18)

STANDARD ENGINEER'S REPORT

DATA

PRODUCT Chevron Starting Fluid

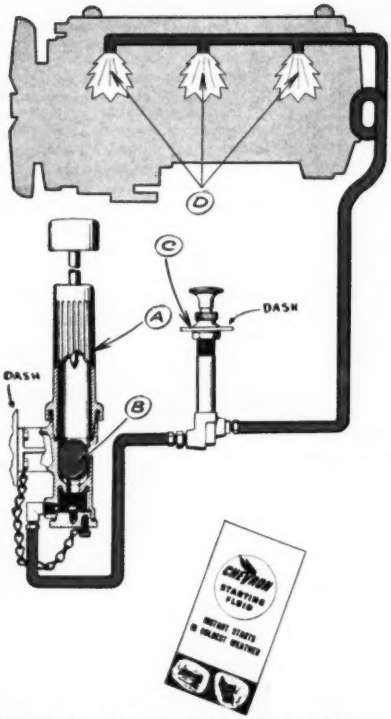
UNITS Diesel + gasoline engines

APPLICATION Into intake manifold

CONDITIONS Freezing weather

SERVICE All types

Engines start in 10 seconds at 50° below zero!



When Chevron Starting Fluid was sprayed into air-intake systems of engines that had been standing idle all night in 50° below zero weather, they started in less than 10 seconds of cranking. Valuable for starting at temperatures of 40° or less in either Diesel or gasoline engines. Comes in convenient, easily handled capsules of two sizes—7cc. and 17cc., packed 12 and 24 in metal containers.

Chevron Starting Fluid is atomized and injected into air-intake systems as engine is cranked . . . process is continued until engine warms enough to run on regular fuel . . . primer equipment may be purchased from fluid supplier.

A. Special tool for puncturing capsules containing fluid supply . . . installed near pump convenient to operator.

B. Capsule in puncturing tool . . . one or more at a time may be used.

C. Pump of primer system mounted on dash convenient to engine operator . . . forces fluid to air-intake system.

D. Nozzles adapted to air-intake system atomize fluid.

CHEVRON STARTING FLUID

Chevron Starting Fluid contains a lubricant that helps prevent starting wear on upper cylinder walls and promotes easier starting. Also contains an oxidation inhibitor and other special additives.

FREE FOLDER that tells how to start engines quicker and easier is yours for the asking. Simply send a card or letter to any of the companies listed below.

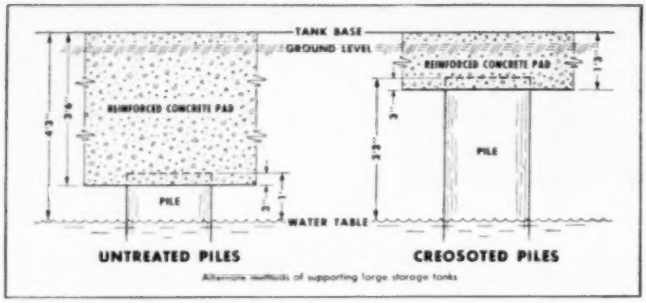
PRODUCT OF THE CALIFORNIA OIL COMPANY

Distributed by

RUTLEDGE OIL COMPANY

3261 ROANOKE ROAD, KANSAS CITY 8, MISSOURI

$33,000 SAVED
with Pressure-Creosoted Piles!



Alternate methods of supporting large storage tanks

...another example of the economy of using Koppers Pressure-Treated Wood

AT THE Williams Plant in Port Arthur, Texas, foundations were recently installed for six large storage tanks. These tanks are on ground that is slightly above the permanent water table. Under such conditions it is common practice to use *untreated* timber piles for foundations.

But *untreated* piles, as shown above, may require a *thick* pad of concrete—and that runs into real money. This thickness of concrete may be necessary because untreated piles cannot be cut off any higher than one foot above the permanent water table; otherwise they are vulnerable to decay and insect attack.

Koppers *Pressure-Creosoted* Piles, on the other hand, are fully protected against decay and insects . . . they can be cut off *at any point above the permanent water table*. A thinner pad of concrete is all that's needed—and the costs are much lower.

That's why the Williams' tanks were founded on Koppers Pressure-Creosoted Piles. The estimated savings in material and labor, based on Gulf Coast prices, are set forth below. These figures cover all six storage tanks—five tanks with a capacity of 500,000 gallons each, and one tank with a capacity of 1,500,000 gallons.

Comparative Costs

USING UNTREATED PILES		USING CREOSOTED PILES
1,479	Number of Piles	1,320
35'	Length of Piles	35'
2,610	Cu. Yds. of Concrete	930
3'6"	Pad Thickness	1'3"
61.95	Tons of Reinforcing Rod	61.95
1,930	Cu. Yds. of Excavation	432
$180,850	Total Cost	$147,338

$180,850
147,338
Savings—$33,512

Use of untreated piles would have increased foundation costs by 22.7%.

Pressure-creosoted piles are now accepted in most modern building codes for permanent construction. Write for further information and quotations.

KOPPERS COMPANY, INC.
Houston, Texas Texarkana, Texas Alexandria, La.
Grenada, Miss. North Little Rock, Ark.

KOPPERS PRESSURE-TREATED WOOD

Trinity Construction Scene

(Continued from page 16)

deep as 41 feet.

After this material is cleared away, the ditch is filled up again with impervious fill which is thoroughly compacted with "sheepsfoot" rollers. Following completion of this work, construction of the dam embankment and outlet works can proceed.

Presently work is also underway on the excavation of the stilling basin area. Water passed from the reservoir through the 16-foot-diameter discharge conduit extending through the base of the dam will be released onto this concrete stilling basin. From here it will flow via an elbow-shaped discharged channel into the original river bed approximately 4,000 feet downstream from the dam. Excavation of this channel will be accomplished under a contract to be awarded later.

West of the banks of the Elm Fork is the third major construction site. Here the Joe W. Hendrix firm is engaged in constructing the third portion of the earth embankment. This is actually a continuation of the first portion of the embankment which lies still further west and which was completed by Cage and Skinner more than two years ago.

The 2100-foot-long portion of the embankment to be constructed under the Hendrix contract is taking form. Earth fill for this work is obtained from designated borrow areas upstream and downstream.

In accordance with Corps of Engineer specifications, the earth fill used in the construction of the dam is thoroughly tested.

To complete the project as rapidly as possible the Hendrix firm is working two 10-hour shifts. Cage and Skinner works a nine-hour shift and Texas Construction Company a 10-hour shift.

Newest of the four flood control works being erected by the Army Engineers on the upper Trinity (the others being Benbrook, Grapevine, and Lavon Dam and Reservoir projects), the Garza-Little Elm project will cost approximately $25,000,000 when completed. Of this total, $3,323,000 is being contributed by the city of Dallas since the project will serve this Texas metropolis as an important source of water supply.

When completed, the main structure of the dam, consisting of the earth fill embankment and the emergency spillway, will be over six miles in length. Its maximum height above stream bed will be 125 feet.

The sum of $3,000,000 which Congress recently appropriated for the Garza-Little Elm project for the 1952 Fiscal Year is earmarked for the following items: Completion of spillway excavation and second (or east) portion of the embankment; continuation of work on the west embankment and on the outlet works; and initiation of spillway construction.

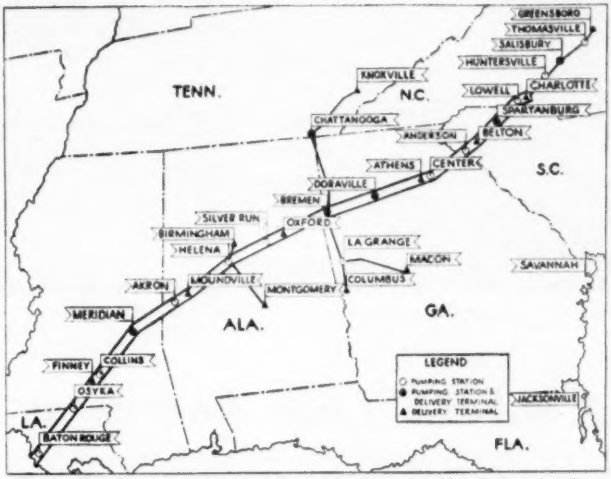
Construction of this project is under supervision of Col. Delbert B. Freeman, Fort Worth District Engineer, Corps of Engineers, U. S. Army.

Plantation Finishes $52,000,000 Baton Rouge-Charlotte Line

PLANTATION Pipe Line Co. last month opened a new trunk line constructed at a cost of $52,000,000 to transport petroleum products over the 700 miles between Baton Rouge, La., and Charlotte, N. C.

Charles R. Younts, Plantation company president, and Gov. Herman Talmadge of Georgia shared honors at the dedication ceremony held at Bremen, Ga., as 1,000 guests watched Georgia chief executive push the button that started a shipment of refined petroleum on its northward journey.

The new route, which parallels an existing pipeline of the Plantation company, links Louisiana and Texas refineries with markets in Mississippi, Alabama, Georgia, Tennessee, South Carolina and North Carolina. The new line is a combination of 18 and 14-inch pipe. Its sister line which it supplements is made up of 12 and 10-inch pipe.



Above—Parallel trunk lines and branches through which Plantation Pipe Line Co. delivers petroleum products from Louisiana and Texas refineries to six southeastern states. The new 18- and 14-inch line from Baton Rouge to Charlotte was constructed by Williams Brothers, of Tulsa, Okla. The original line of the route now paralleled by the new pipe stretches to Greensboro.

10,000,000-Gallon Capacity

When new pumping facilities and tanks are finished early this year, the Plantation delivery capacity will be increased one hundred fifty per cent to 10,000,000 gallons daily. The original system built ten years ago has been delivering 4,000,000 gallons of gasoline, kerosene, tractor and diesel fuels and heating oils.

Eighteen delivery terminals are located along the two parallel lines and four branches of the 1,967-mile Plantation system. These are located at Collins and Meridian, in Mississippi; Moundville, Birmingham, Oxford and Montgomery, in Alabama; Bremen, Doraville, Columbus, Athens, and Macon, in Georgia; Chattanooga and Knoxville, in Tennessee; Belton and Spartanburg, in South Carolina and Charlotte, Salisbury and Greensboro, in North Carolina.

The pipe line company's eighteen electrically powered pumping stations are at Baton Rouge; Osyka, Collins and Meridian, Mississippi; Akron, Helene and Silver Run, Alabama; Bremen, Athens and Doraville, Georgia; Chattanooga, Tennessee; Anderson and Spartanburg, South Carolina, and Lowell, Thomasville, Huntersville and Salisbury, North Carolina.

Pipe Two Feet Underground

The new line stretches across swamplands, forests, farms and streets in almost a straight line from Baton Rouge to Charlotte. It is buried about two feet under ground throughout most of its 700-mile length.

Operations are carried on twenty-four hours a day, seven days a week. The gasoline, kerosene, tractor and diesel fuel and heating oils of fourteen oil companies move through the line at the steady rate of 96 miles daily. Before the newly completed expansion, Plantation facilities worked at an annual rate of one and one-half billion gallons.

Petroleum products are metered into the system in batches of 25,000 barrels and over. Mixture of adjoining products is virtually eliminated by scheduling liquids according to characteristics and use of high pumping pressures and turbulent flow. Each shipper gets back the same product it put into the line.

Construction of ten additional 55,000-barrel storage tanks at Baton Rouge and eight at Bremen, where the dedication ceremony was held, will give the Plantation company a total working storage capacity of 150,000,000 gallons. In addition, there are always about 63,000,000 gallons of products in the 1,967 miles of pipe.

Both mains connect with eight-inch and four-inch branch lines which carry products to markets off the main route stretching in almost a straight line between Baton Rouge and the northernmost terminals. The new line terminates

(Continued on page 48)

Below—Typical scene during construction of the new 700-mile Plantation pipe from Baton Rouge to Charlotte shows a side-boom tractor lowering a section of pipe into a three-foot ditch. The section, its joints welded and tested against leakage, is shown coated with asphalt waterproofing compound and wrapped in special paper to prevent exterior corrosion.

Above—New flight test hangar to be built by McDonnell Aircraft Corp., St. Louis, Mo. The 200- by 500-foot hangar will cost about $3,500,000. G. L. Tarlton Contracting Co., of St. Louis is the contractor. Sverdrup & Parcel, Inc., are Architects, Engineers.

$5,532,857,000 Awards an All-Time Peak

NINTEEN fifty-one marked the peak in southern construction history.

Total value of contracts awarded in the sixteen-state area below the Mason and Dixon line was $5,532,857,000, or more than twenty-six per cent above the $4,369,152,000 registered in the preceding year.

The year started at a high level. The first-month total was $1,082,466,000. This was a record for such a period. Higher than average totals—$641,867,000 in February and $577,160,000 in March — prevailed in the first quarter.

The monthly average for the second quarter was $346,541,000. Totals during this time were $316,368,000 in April; $363,115,000 in May and $366,142,000 in June.

The $1,045,625,000 total for the second quarter brought the figure for the first half of the year to $3,347,118,000, or an eighty-four per cent gain when compared with the same period of 1950.

For the third quarter the monthly average was $457,782,000. The overall total of $1,373,347,000 in that period included monthly figures of $755,717,000 for July; $365,078,000 for August and $252,552,000 for September.

A monthly average of $270,974,000 was established in the last quarter. This low figure reflected the restrictions, the shortages of materials and the uncertainty as the year neared its end.

Totals for the three months of the last quarter were $351,721,000 for October; $221,116,000 for November and $239,555,000 for December. The latter two were the lowest of the year.

$2,296,183,000 Industrial Work

The $5,532,857,000 for the entire year embraced $2,296,183,000 for industrial projects; $995,653,000 for private building; $810,059,000 for public building; $805,417,000 for heavy engineering projects and $625,545,000 for highways and bridges.

Industrial construction includes the huge atomic energy projects in South Carolina and Kentucky, as well as the somewhat lesser-sized but still large aluminum and chemical plant projects in the Gulf Coast area. These were largely instrumental in pushing the value of such work to its high level, which is more than twice that for the previous twelve months.

Private building, although ranking second in value among the several categories, represented a decline. The $995,653,000 for such work is eighteen per cent below the figure for such work last year.

Elements in the private building total were $794,148,000 for residential work; $79,525,000 for assembly buildings; $63,036,000 for office building and $58,944,000 for commercial structures.

Largest proportion of the private building figure is the $794,148,000 for residential building. This was seventy-nine per cent of the total. It was a drop of about seven per cent from the level of such work last year.

Declines in other types of private building were more pronounced. The $79,525,000 for assembly buildings is about thirty-three per cent down; the $63,454,000 of office building, fifty per cent, and the $58,944,000 of commercial building, forty-seven per cent.

Public Building at $810,059,000

The $810,059,000 of public building is twenty-eight per cent below its last year's counterpart. The figure includes $367,625,000 for school buildings; the rest for government structures.

Heavy engineering construction in the last twelve months, with its $805,417,000 total, is made up of $595,242,000 for dams, drainage, earthwork and airports; $156,598,000 for sewer and water work, and $63,577,000 for government electric projects.

Considered as an entirety, the heavy engineering value represents a rise of above fifty-six per cent. The dams-drainage-earthwork-airport classification is up two hundred twenty-two per cent. Sewer and water work shows an increase of ten per cent. Government electric projects have dropped drastically.

Stability in Highway Field

Statistics reveal that highways and bridges in the contract stage were at practically the same level as in the preceding year. The total for 1951 was $625,545,000; for 1950, $622,535,000. Several large lettings at the end of the year for which returns had not yet been received

SOUTH'S CONSTRUCTION BY STATES

	December, 1951 Contracts Awarded	December, 1951 Contracts to be Awarded	Contracts Awarded Twelve Months 1951	Contracts Awarded Twelve Months 1950
Alabama	$10,732,000	$21,116,000	$293,087,000	$177,335,000
Arkansas	2,415,000	695,000	151,066,000	137,098,000
Dist. of Col.	5,845,000	6,974,000	40,383,000	40,985,000
Florida	19,778,000	25,247,000	509,055,000	402,360,000
Georgia	12,066,000	15,795,000	222,883,000	155,703,000
Kentucky	27,150,000	25,623,000	527,730,000	97,448,000
Louisiana	17,771,000	126,504,000	421,115,000	347,533,000
Maryland	21,452,000	54,168,000	397,946,000	337,729,000
Mississippi	3,840,000	7,033,000	155,507,000	125,955,000
Missouri	10,043,000	9,526,000	179,304,000	237,080,000
N. Carolina	12,020,000	44,714,000	350,893,000	364,940,000
Oklahoma	7,733,000	2,533,000	86,202,000	129,240,000
S. Carolina	4,893,000	265,800,000	496,126,000	384,389,000
Tennessee	15,992,000	10,136,000	224,259,000	250,148,000
Texas	48,032,000	170,646,000	1,111,220,000	893,673,000
Virginia	9,657,000	9,114,000	300,819,000	250,075,000
W. Virginia	12,136,000	770,000	65,262,000	37,541,000
Total	$239,555,000	$796,394,000	$5,532,857,000	$4,369,152,000

would increase the 1951 total substantially.

The December total of $239,555,000 included $61,558,000 for public building; $58,235,000 for highways and bridges; $54,676,000 for heavy engineering type projects; $40,696,000 for private building and $24,390,000 for industrial plant work.

The $61,558,000 for public building in December includes $25,724,000 for school building and represents an increase of eighty-six per cent over the total for the month before. School building more than doubled.

December Road Work Up

December also saw a spurt in highway and bridge work in the contract stage. The $58,235,000 total was sixty-seven per cent greater than the $35,350,000 for the preceding month. Including several lettings not received in time, the December figure would be much larger.

Largest factor in the $54,676,000 heavy engineering figure was the $27,570,000 for dams, drainage, earthwork and airports. This was a slight drop from the level of the previous month.

Sewer and water construction, however, rose almost fifty-six per cent. Government electric projects in the last month of the year also accelerated. The December total was $8,196,000; the November figure, $1,713,000.

Private building dropped in December as compared with the preceding month. The $40,696,000 was down thirty-six per cent. Residential work in December totaled $28,980,000. In November it was $51,841,000.

December Office Projects

Office building in December amounted to $5,973,000, as compared with the $3,128,000 for the preceding month. Commercial building remained almost the same. The December figure was $2,765,000; the November figure, $2,498,000. Assembly buildings were valued at $2,978,000.

Industrial building contracts in December were placed at $40,696,000. In the preceding month, the figure was $46,499,000.

Forecasts for construction in the new year indicate a slight decline from the $39,000,000,000 reportedly put in place last year. The Associated General Contractors of America states that $37,000,000,000 worth is possible in 1952.

Country's Volume High

The 1951 volume, according to that national organization of general contracting firms, is the highest yet performed in any year both from the physical and dollar viewpoints, topping any single manufacturing industry's output as well as the gross income estimated for agriculture.

Of the $39,000,000,000 estimated in 1951, the A. G. C. reports that almost $30,000,000,000 was for new construction and the remainder for general maintenance and repairs. About $28,000,000,000 of the figure predicted for 1952 will be new construction.

Even though the 1951 volumes surpasses previous years, the contractors' agency declares, "it is obvious that the accomplishment of a substantially higher total under the increasing pressures for many civilian projects was held back principally by lack of industrial capacity to produce enough of the critical materials to meet both the mounting defense program requirements and essential civilian needs.

New peaks were registered in construction of private industrial, school, hospital, religious, pipeline, electric light and power and state and local sewage disposal and water supply facilities. Declines were noted in the residential, commercial, highway and conservation and development construction for the country.

Construction of military, naval and atomic energy facilities, although not reaching previous heights, the general contractors said, increased about four hundred per cent from 1950.

The year "saw a gradually diminishing supply of critical construction materials for civilian projects, as they were siphoned off by growing defense requirements and foreign programs.

Government restriction and allotments under the controlled materials plan cut

(Continued on page 49)

SOUTH'S CONSTRUCTION BY TYPES

	December, 1951 Contracts Awarded	December, 1951 Contracts to be Awarded	Contracts Awarded Twelve Months 1951	Contracts Awarded Twelve Months 1950
PRIVATE BUILDING				
Assembly (Churches, Theatres, Auditoriums, Fraternal)	$2,978,000	$9,749,000	$79,525,000	$120,234,000
Commercial (Stores, Restaurants, Filling Stations, Garages)	2,765,000	2,125,000	58,944,000	112,510,000
Residential (Apartments, Hotels, Dwellings)	28,980,000	46,331,000	794,148,000	855,103,000
Office	5,973,000	1,480,000	63,036,000	126,490,000
	$40,696,000	$59,685,000	$995,653,000	$1,214,337,000
INDUSTRIAL	$24,390,000	$288,156,000	$2,296,183,000	$891,132,000
PUBLIC BUILDING				
City, County, State, Federal, and Hospitals	$35,834,000	$52,719,000	$442,434,000	$710,244,000
Schools	25,724,000	59,396,000	367,625,000	416,470,000
	$61,558,000	$112,115,000	$810,059,000	$1,126,714,000
ENGINEERING				
Dams, Drainage, Earthwork and Airports	$27,570,000	$32,560,000	$595,242,000	$263,116,000
Federal, County, Municipal Electric	8,196,000	251,800,000	63,577,000	109,778,000
Sewers and Waterworks	18,910,000	20,931,000	156,598,000	141,540,000
	$54,676,000	$305,291,000	$805,417,000	$514,434,000
ROADS, STREETS, BRIDGES	$58,235,000	$31,147,000	$625,545,000	$622,535,000
TOTAL	$239,555,000	$796,394,000	$5,532,857,000	$4,369,152,000

New Wyatt office Building, Washington. A. R. Class is architect.

Lauer

Above—Forces of Martin G. Imbach, Inc., local heavy construction firm, have the timber pile work well underway on the second Light Street waterfront improvement contract at Baltimore, Md. Workmen are shown cutting and capping the pile bents for the relieving platform, which with a steel sheet piling bulkhead will enclose the 165,000-cubic yard fill. Earth work is about two-thirds completed by William A. Harting. Beyond the newly driven piles are those cut off to elevation, with the capped bents extending to the first contract completed in the background. Empire Construction Co., also of Baltimore, did the original section. The area to the left of the piles is yet to be filled. Original plans have been changed to carry the bulkhead off on an angle to William Street, instead of in a straight north-south line to the south shore. Progress on the project is being retarded by a delay in obtaining steel for bulkhead.

Southern Construction Projects

(Typical and Important Reports Excerpted from Daily Construction Bulletin)

ALABAMA

Among the coal mining projects authorized by Defense Solid Fuels Administration are: Alabama By-Product Corp., Tarrant, $127,000; Republic Steel Corp., Thomas, $6,000,000; Republic Steel Corp., Thomas, $300,000; Sloss-Sheffield Steel & Iron Co., Birmingham, $2,063,986; Tennessee Coal, Iron & Railroad Co., Fairfield, $45,000; Tennessee Coal, Iron & Railroad Co., Fairfield, at $46,000; Woodward Iron Co., Woodward, $2,397,000.

ALICEVILLE — Pickens County Hospital Authority, T. E. Bryant, Reform, let contract to A. C. Samford, Box 1262, Albany, Ga., at $275,785 for 20-bed hospital.

ANDALUSIA—Covington Electric Cooperative let contract to Irby Construction Co., 817 S. State St., Jackson at $113,699 for line.

ANNISTON—City Board of Water Commissioners received low bid of $112,134 from P. A. Buchanan Construction Corp., Birmingham, for water distribution system.

ANNISTON—YMCA of Anniston has NPA approval for YMCA building, $415,000.

ANNISTON — Corps of Engineers, South Atlantic Division, Box 1889, Atlanta, Ga., has approval of 175-unit Wherry Act Housing Project.

ATHENS—City received low bids for sanitary sewers, sewage treatment plant and water well and well house. Contract A, Holt Rast & Assoc., Birmingham; $242,997; Contract B, Sullivan, Long & Hagerty, Birmingham, $125,750.

AUBURN—Alabama Polytechnic Institute plans student union building; cost $1,000,000.

BIRMINGHAM—City Board of Education plans 42nd St. School for negroes.

BIRMINGHAM — Chapman Radio & TV Store received low bid from W. H. Mason for office and warehouse.

BIRMINGHAM—Housing Authority plans 500 unit housing project.

BIRMINGHAM — Hayes Aircraft Corp., Charles R. Farris, received low bid from Richardson Construction Co., Birmingham at $308,650 for reactivatiton of service plt, Municipal Airport.

CHATAM — Washington County Hospital Association will soon call for bids for 20-bed hospital.

CLANTON—Clanton Baptist Church Congregation has plans in progress for education building, $100,000.

DEMOPOLIS — Black Warrior Electric Membership Corp., let contract to Victory Electric Company, Mobile, Ala., at $390,615 for 50.59 miles of line.

FAIRFIELD—Board of Education let contract at $197,490 to E. C. Coston, Bessemer, for Robinson School.

FLORENCE—Eliza Coffee Memorial Hospital let contract to Craig-Baskerville, Inc., Knoxville, Tenn., at $249,169 for annex.

FULTONDALE — Rural Housing Authority of Jefferson County has plans in progress for 60 unit housing project.

LEIGHTON — Colbert County Board of Education, Tuscumbia, received low bid of $309,400 from Construction Engineers, Inc., Jasper, for county high school.

MONTGOMERY — Montgomery County Board of Education let contract at $253,000 to Bear Brothers Inc., Montgomery, for South Elementary Montgomery School.

MONTGOMERY — Montgomery County Board of Education, let contract at $276,650 to Bear Brothers Inc., Jefferson St., for addition to George Washington Carver School.

MOUNTAIN BROOK — Canterbury Mountain Brook Methodist Church has NPA approval for church, $550,000.

ONEONTA—Blount County Hospital Authority let contract to J. F. Holley, Birmingham at $406,925 for one-story hospital.

OPELIKA — Housing Authority received low bid of $537,111 from Jones & Hardy, Montevallo, Ala., for 76 unit housing projects.

REFORM—Pickens County Hospital Authority, T. E. Bryant, let contract to A. C. Samford, Box 1262, Albany, Ga., at $272,932 for 20-bed Hospital.

ROANOKE—Randolph County let contract to Batson-Cook Co., West Point, Ga., at

(Continued on page 24)

"QUICK-WAY" digging drainage ditch.

"QUICK-WAY" used in rehandling manure.

"QUICK-WAY" dragline moves ballast.

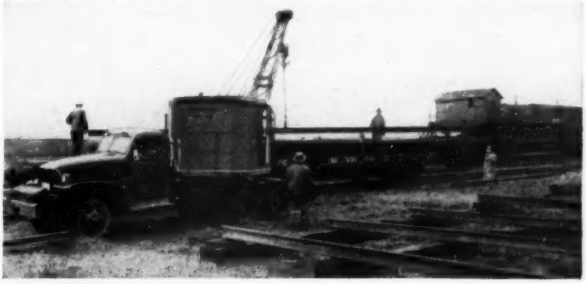
"QUICK-WAYS" VS. WORK TRAINS

Used to ***SAVE MONEY*** in handling materials, relaying rails and maintenance on all parts of the system, 3 machines in Seattle, 2 in Montana Districts, 2 in Duluth-Minneapolis, 1 in Lewiston, Idaho, 1 in Portland.

After an initial test of one machine in 1947, a total of *9 "QUICK-WAYS"* are now used for the following purposes:

1. For rail yards in piling new and used rails, loading and unloading rails.
2. For rail relay work, handling and placing up to 125 rails per day.
3. For ditching, laying pipe, drainage and backfilling along right-of-way.
4. For handling heavy timbers on bridge work.
5. For removing ballast between double tracks.
6. For rehandling manure removed from stock cars.

"QUICK-WAY" with crane attachment loading rails from stock pile to flat car.



Tremendous savings are being made by use of small machines which move between jobs on highways and work on and over railroad beds saving expense of work trains doing rail relay, ditching and drainage work along the right of way and handling numerous small jobs over the entire system which large machines cannot handle with any degree of efficiency due to their size, weight, and excessive cost of transportation.

"QUICK-WAYS" have dozens of uses in numerous types of jobs—handle aggregate, building materials, excavation work, dig ditches, drive pile, pour concrete, set steel, etc. Easy to move from job to job. Eight attachments. Four sizes from 3 to 10 ton crane capacity.

Only ***"QUICK-WAY"*** *gives you* "QUICK-WAY" quality construction—all steel for strength and lightness, accurate balance, high capacity to weight ratio. Ask your distributor for a free demonstration.

"QUICK-WAY" **TRUCK SHOVEL CO** • Denver, U.S.A.
Reg. U.S. Pat. Off.

"QUICK-WAY" TRUCK SHOVEL DISTRIBUTORS:

FLORIDA-GEORGIA TRACTOR CO.
Jacksonville, Tallahassee, Orlando, Lakeland, Tampa and Miami, Florida; Savannah, Georgia

RISH EQUIPMENT CO.
Bluefield, Charleston, Cincinnati, Clarksburg, Richmond, Roanoke

SOUTHERN EQUIPMENT SALES CO.
Columbia, South Carolina

POWER EQUIPMENT COMPANY
Knoxville, Chattanooga and Kingsport, Tenn.

HAMPTON RDS. TRACTOR & EQUIP. CO.
Norfolk, Virginia

NORTH CAROLINA EQUIPMENT CO.
Raleigh, Charlotte, Asheville, Wilmington, Guilford and Greenville, North Carolina

RAY BROOKS MACHINERY CO.
Montgomery and Mobile, Alabama

RAY BROOKS TRUCK & TRACTOR CO.
Pensacola, Florida

FREE STATE EQUIPMENT CO., INC.
Baltimore, Md.

TRACTOR & EQUIPMENT CO., INC.
Birmingham, Alabama

Southern Construction Projects

(Typical and Important Reports Excerpted from Daily Construction Bulletin)

ALABAMA

(Continued from page 22)

$405,285 for 40-bed Hospital.

SELMA — Methodist Children's Home has plans in progress for 2 cottages at $100,000.

SYLACAUGA — Housing Authority has plans in progress for 144 unit housing project.

TUSCALOOSA — Housing Authority let contract to G. E. Bass & Co., Jackson, Miss., at $2,071,033 for housing project, 340 units.

ARKANSAS

CARROLL — Carroll Electric Cooperative Corp., Berryville, let contract to Southern Line Const. Co., Box 1898, Memphis, Tenn., at $292,411 for 268.8 miles of line.

JEFFERSON COUNTY — Corps of Engineers, Vicksburg, Miss., received low bid of $168,500 from S. K. Jones Construction Co., 819 Sterick Bldg., Memphis, for approx. 500,000 cu. yds. of earthwork on north bank of Arkansas River.

JEFFERSON COUNTY — Corps of Engineers received low bid of $432,780 from Pine Bluff Sand & Gravel Co., foot of Nebraska St., for revetment construction Arkansas River Bank Stabilization Works, on left descending bank of Arkansas River between Plum Bayou and Rob Roy railroad bridge.

NEWPORT—Farmers Electric Cooperative Corp., Newport, has REA loan of $250,000 for 100 miles of distribution line.

PINE BLUFF—Corps of Engineers, Little Rock, let contract to F. O. Gilbert, Bossier City, La., at $546,677 for material storage sheds and roads, Midwest Chemical Depot, Pine Bluff Arsenal.

SHUMAKER—Navy Dept., George M. Gans, Comdr., Officer in Charge of Construction, Naval Ammunition Depot, received low bid from Peterson, Garbi & Joseph, Inc., E. 9th St., North Little Rock, at $976,400 for barracks.

WEST MEMPHIS — Holy Mission Church Congregation received low bid from C & C Construction Co.; Charles S. Peete, Goodwyn Institute Bldg., Memphis, Tenn.

DISTRICT OF COLUMBIA

WASHINGTON — Chesapeake & Potomac Telephone Co. of Baltimore plans $250,000 central office building at 8900 Riggs Rd.

WASHINGTON — Department of Education, Hobart M. Corning, Supt., announce construction will start early in 1952 for addition to Payne Elementary School at 15th & C Sts.; $554,000 allocated.

FLORIDA

Virginia-Carolina Chemical Corp., C. E. Heinrichs, Vice Pres., Richmond, Va., announced plans for a new plant to make "wet-process" acid, anticipated will incorporate uranium recovery facilities.

Davison Chemical Corp., R. L. Hockley Vice Pres., Ridgewood, has certificate of necessity for a triple super-phosphate plant and recovery of by-product uranium.

COCOA—Corps of Engineers, Jacksonville, will receive bids February 1, for extension of electrical distribution to technical area, Air Force Missile Test Center, Patrick Air Force Base.

DADE COUNTY — City, Department of Water & Sewers, W. A. Glass, Director, 3342 Dinner Key Drive, Coconut Grove, Miami, received low bids for water treatment plant, Contract No. SW 16-A, at $1,172,867 from Fred Howland, Inc., 1451 NW 20th St., Miami, and Contract No. SW 16-B, $1,026,211 from Pitt Construction Co., 1235 Washington Blvd., Pittsburgh, Pa.

DADE COUNTY—Board of Public Instruction, James T. Wilson, Supt., Miami, let contract to Bradford Builders, Inc., 1101 Lincoln Road Bldg., Miami Beach, at $363,344 for Van E. Blanton Elementary School, NW 103rd St. & NW 11th Ave.

DADE COUNTY — Booker "T" O. 1163 NW 3rd Ave., Miami, let contract to Interstate Construction Co., 2236 NW Miami Court, Miami, for apartment project, $300,000.

EGLIN—Housing & Home Finance Agency, Community Facil Service, Box 1528, Jacksonville, let contract at $250,880 to Eaton & Elzea Construction Co., Panama City, for elementary school.

FORT LAUDERDALE — Corps of Engineers, Office of District Engineers, received low bid of $155,500 from Hooper Construction Company, 136 Aragon Ave., Coral Gables, for treatment of pool-side slopes, of levees L-30 and L-33-L-37.

FORT MYERS—Lee County Electric Cooperative let contract to Irby Construction Co., 817 S. State St., Jackson, Miss., at $168,822 for REA lines, 122 miles.

GAINESVILLE — Board of Commissioners of State Institutions, Capitol Bldg., Tallahassee, let contract to Southern Construction Co., Augusta, Ga., at $288,483 for seven ward buildings, Florida Farm Colony.

GAINESVILLE — Florida State Improvement Commission received low bid from Southern Construction Co., Inc., Augusta, Ga., at $288,438 for seven ward buildings, Florida Farm Colony.

JACKSONVILLE — Hospital Board of Trustees, Bert Reid, Pres., announced plans for Baptist Hospital on Southside and 50-bed Children's Hospital, $1,250,000.

JACKSONVILLE—Peninsular Life Insurance Co., has NPA approval for office building, $1,800,000.

JACKSONVILLE — Federal Reserve Bank of Atlanta, Ga., has NPA approval for bank, $2,200,000.

KEY WEST — Navy Department, Public Works, Charleston, S. C., will receive bids January 24 for dredging at Boca Chica Field and Naval Station.

KEY WEST—Board of County Commissioners have NPA approval for jail and courthouse, $892,000.

MADISON — Tri-County Electric Cooperative let contract to Irby Construction Co., 817 South State St., Jackson, Miss., at $144,671 for 110.5 miles of line.

MARATHON—Sadowski & Son, Box 305, Key West, will build motor court, cost, $200,000.

ORLANDO—Corps of Engineers, Jacksonville, will receive bids February 5, for parachute building, dinghy shop, hydrogen-oxygen storage and radar training building, Pinecastle Air Force Base.

ORLANDO—Corps of Engineers, Jacksonville, received low bid of $181,415 from J. Hilbert Sapp, Orlando, for photographic laboratory and automotive maintenance shop, Pinecastle Air Force Base.

PANAMA CITY—Housing & Home Finance Agency, Community Facil Service, Box 1528, Jacksonville, let contract at $164,926 to Eaton & Elzea Construction Co., Panama City, for elementary school, Tyndall Air Force Base.

PENSACOLA—Board of Public Instruction received low bid of $757,400 from Dyson & Co., 806 W. Romana St., for high school.

ST. PETERSBURG — City has NPA approval for municipal building, $564,437.

SURFSIDE—Co Do Dale Corp. let contract to Herman J. Sattler, 8950 Hawthorne Ave., for 26 unit apartment building, $200,000.

SURFSIDE—Templeton Arms, Inc., 9445 Collins Ave., let contract to Towers Construction Company, 8095 Abbott Ave., Miami Beach, at $115,000 for 15-unit apartment building.

WEST PALM BEACH—Corps of Engineers, Jacksonville, let contract to Trieste Construction Co. and C. W. Trieste, Del Ray Beach at $172,487 for rehabilitation of 31 buildings, Phase 1, Palm Beach International Airport.

GEORGIA

ALBANY—City has NPA approval for warehouse and service building, $117,472.

AMERICUS — Housing Authority received low bid of $354,745 from Beers Construction Co., 70 Ellis St., Atlanta, for housing project.

ATHENS—Board of Regents of University System of Georgia received low bid of $376,361 from Vyn Winkle & Co., 807 Peachtree St. Bldg., Atlanta, for school of veterinary medicine at University of Georgia.

ATLANTA — University System Building Authority, Atlanta, received low bid of $969,310 from Burford, Hall & Smith, 140 Edgewood Ave., for boiler plant and installation of new boilers at Georgia School of Technology.

ATLANTA—Sears, Roebuck & Co. has NPA approval for warehouse, $1,226,522.

ATLANTA—Cascade Baptist Church Congregation received low bid of $258,227 from Griffin Construction Co. for addition to church.

ATLANTA—Logan & Williams, 320 Palmer Bldg., Atlanta, Archts., have working drawings in progress for one-story warehouse, Atlanta General Depot, $1,260,000.

ATLANTA — Kirkwood Methodist Church Congregation has plans completed for educational building, cost $125,000.

CARTERSVILLE — Goodyear Clearwater Mills plans one-story addition to its Atco Mill.

CEDARTOWN—Polk County has NPA approval for courthouse, $412,398.

DALTON—City Board of Education, Clifford G. Hale, Supt., has preliminary plans in progress for combination gymnasium and auditorium.

GRACEWOOD—Gregson & Ellis, 622 Mortgage Guarantee Bldg., Atlanta, Archts., plans dormitory at Georgia Training School, $200,000.

MARIETTA—Board of Education received low bid of $302,947 from Smith & Jones, 936 W. Peachtree St., Atlanta, for high school.

SAVANNAH—Corps of Engineers, Savannah, received low bid from Cleveland Electric Co., Jacksonville, Fla., at $144,097 for electrical distribution and sub-station, Hunter Air Force Base.

SYLVESTER—Housing Authority received low bid of $393,320 from E. A. Scott & Sons, Americus, Ga., for housing project.

VALDOSTA—Housing Authority plans Ga. 100-3, 80 units, and Ga. 100-4, 170 units housing project.

KENTUCKY

ASHLAND—Allied Chemical & Dye Corp. has authorization from Defense Solid Fuels Administration for coke oven and coal chemical construction program, $12,500,000.

BARDSTOWN—Salt River Rural Electric Cooperative Corp., Bardstown let contract to Griffin Construction Co., 300 Walnut St., Owensboro, at $69,646 for system improvement; let contract to Real Electric Co., 1701 Triplett St., Owensboro at $78,496 for 4.36 mi. of 69 kv transmission line, plus one 1500 kv substation: Section 2.

CALVERT CITY—Pennsylvania Salt Manufacturing Co., 1000 Widener Bldg., Philadelphia, Pa., announced plans for adding new facilities, including an electrolytic chlorine-caustic soda unit, estimated cost $8,000,000; Leonard Construction Co., Chicago, Ill., are engineer-contractors for new unit; preliminary work started; new plant will go into operation early in 1953.

CAMPBELL AIR FORCE BASE—Corps of Engineers, Louisville, will have plans available for bidders about January 24, for barracks, Campbell Air Force Base.

CAMPBELL AIR FORCE BASE—Corps of Engineers, Louisville, to have plans available for bidders about January 24, for security roads and pass office, Campbell Air Force Base.

DANVILLE—Inter-County Rural Electric Cooperative Corp., let contract to Griffin Construction Co., 300 Walnut St., Owensboro, at $115,765 for 30.55 mi. of line serving 28 members, plus conversion.

FORT CAMPBELL—Corps of Engineers, Louisville, to have plans available for bidders about January 22, for base operations building.

FORT KNOX—Corps of Engineers, Louisville, let contract to Southeastern Construction Co., 301 W. 2nd St., Charlotte, N. C.; T. A. Loving & Co., Goldsboro, N. C.; and Doyle & Russell Co., 823 W. 21st St., Norfolk, Va., at $22,701,020 for permanent troop housing and supporting facilities.

GRAYSON — Grayson Rural Electric Cooperative Corp., let contract to Killoran Electric Co., 116 S. Superior St., Appleton, Wisc. for 160 miles of distribution line serving 398 members, at $270,056, Section 1; Section 3 in amount of $132,197 for 14 miles of 69 KV transmission plus one substation, to Real Electric Corp., Owensboro.

LOUISIANA

ALEXANDRIA—St. Frances Cabrini Parish received low bid of $158,507 from James A. Elland, Jr., P. O. Box 487, Bunkie, for new school.

ALEXANDRIA—Board of Education, T. C. Williams, School Supt., received low bid of $862,500 from F. H. Martel Co. of Washington, D. C. for 30-classroom elementary school.

ALEXANDRIA—Corps of Engineers, Little Rock, Ark., received low bid from Hooter Brothers, Alexandria at $146,563 for conversion of heating system to natural gas, Alexandria Municipal Airport.

BATON ROUGE—City Parish Council let contract to McWilliams Dredging Company for dredging silt at municipal docks.

BURAS — Plaquemines Parish School Board, Pointe-a-la-Hache, received low bid

of $1,457,504 from Shelby Construction Co., Inc., 1108 Canal St., New Orleans, for elementary and high school.

CONCORDIA PARISH — Police Jury received low bid of $114,141 from H. B. Hornsby, contr., Bossier Bank & Trust Co., Bossier City, La., for 1,030,000 cu. yds. of channel excavation.

CONCORDIA PARISH—Corps of Engineers, Vicksburg, Miss., received low bid of $296,772 from Joe W. Hendrix, contractor, P. O. Box 773, Shreveport, Louisiana, for 1,757,000 cu. yds. of earthwork and one drainage structure, etc.

EDGAR — St. John the Baptist Parish School received low bid from A. & O. Builders, 3207½ Metairie Road, New Orleans, at $297,994 for 14-classroom building, agricultural, gymnasium for Edgard High School for whites and $228,921 for colored high school.

FRANKLIN—Board of Commissioners of Hospital Service District No. 1 of St. Mary Parish let contract to Herman L. Bienvenu, 407 S. Main St., St. Martinville, at $322,558 for one-story Franklin Foundation Hospital.

GRAMBLING—State Board of Education, Baton Rouge, received low bid of $532,626 from Rannie Terral, Farmerville, for new physical education and classroom building at Grambling College.

HANNA—Corps of Engineers received low bid of $194,953 from Hough-Cowgur & Co., Inc., for 2520 linear feet of pile dike on right descending bank of Red River.

HOMER—Claiborne Electric Cooperative has $910,000 REA loan for 136 miles of distribution line.

HOUMA—Terrebonne Parish School Board let contract at $205,505 to John C. Corbin, 833 Wood St., for Southdown High School.

LAFAYETTE — Lafayette Parish School Board let contract at $128,148 to Weill Lumber Co., Abbeville, for 10-classroom elementary school.

LAKE CHARLES — Corps of Engineers, Galveston, Tex., received apparent low bid from Bergstrom & Yates, 614 Higgins, Marshall, Tex., at $355,720 for base supply warehousing, Lake Charles Air Base.

LAKE CHARLES — Defense Production Administration granted certificate to Cities Service Refining Corporation for $26,650,000 project for production of aviation gasoline.

LAKE CHARLES—Mayor received low bid of $104,881, from Flenniken Construction Co., P. O. Box 634, Shreveport, La., for street paving projects.

MONROE — Nursing Home of the St. Francis Sanitarium, 309 Jackson St., let contract to W. C. Salley, P. O. Box 24, Monroe, at $107,480 for new kitchen addition, St. Francis Sanitarium.

MONROE — State Division of Administration, Baton Rouge, received low bid from W. C. Salley, P. O. Box 24, Monroe at $334,884 for Maternity Unit at E. A. Conway Memorial Hospital.

NEW ORLEANS—American Cyanamid Co., New York, N. Y., may construct a $47,745,000 plant for nitrogen production in New Orleans area.

NEW ORLEANS—Orleans Parish School Board let contract at $701,500 to Keller Construction Corp., 7900 Palm St., New Orleans, for Union Park Elementary School.

NEW ORLEANS—Orleans Parish School Board let contract at $971,000 to Lionel F. Favret Co., Inc., 937 Gravier St., for Taylor park Uptown Negro Elementary School.

NEW ORLEANS — Sewerage and Water Board of New Orleans let contracts for water treatment project, Contract No. 155-W, water treatment units for water purification plant and contract No. 156-W, furnishing sludge removal equipment for water purification plant, Dorr Co., low bidder at $395,515 for water treatment units and $68,515 for sludge removal equipment.

NEW ORLEANS—National Cash Register Co., Dayton, Ohio, has acquired site in 1800 Block Canal St. for building, estimated cost $200,000.

NEW ORLEANS—J. J. Culotta, 207 Sycamore Drive, Metairie, will receive sub-contracts for tourist court development on Airline Highway corner of Harlem St., New Orleans, cost $250,000.

NEW ORLEANS—Street Commission Council received low bids for projects as follows:

Widening with conc. and asph. pav., of Gravier from Saratoga to Claiborne, $71,-920, and widening with conc. and asph. pav. of Perdido from Saratoga to Claiborne, $77,-449; Boh Bros. Constr. Co.

Subsurf drain on London from St. Bernard to Broad, Mile Cullen, $76,131, sub. drain on S. Miro from Melpomene to Third, $12,453, subsurf. drain on S. Tonti from Melpomene to Third, $10,889, sub surf. drain on Caffin Ave. to N. Claiborne to N. Galvez, $22,958.

Sub. surf. drain on S. Prieur from Napoleon to Upperline, $20,830; sub. drain, on Rosemary Pl and Woodlawn Pl. from Florida Ave. to Bakewell pl., $8362.

NEW ORLEANS — Leigon Oaks Housing Corporation, Inc., let contract to Shelby Construction Co., Inc., 1108 Canal St., at $934,548, for 91 homes, located in area from Paris Ave. to Cartier St. and from Prentiss to Pressburg Sts.

NORCO—Defense Production Administration approved Shell Oil Company's plans for $29,180,000 expansion for gasoline production.

OAKDALE—Housing Authority plans low rent housing projects, 34 for white families and 36 Negro, $685,000.

OPELOUSAS — St. Landry Parish School Board approved $2,000,000 bond issue for school construction.

PLAQUEMINE — Mayor and Board of Aldermen let contract at $284,917 to W. H. O'Toole Construction Co., 1714 E. Lakeview Ave., Pensacola, Fla., sewerage collection system water distribution system and sewage outfall force line and sewage pumping station.

RAYNE — Acadia Parish School Board, Crowley, let contract at $425,556 to Robert Angelle, Breaux Bridge, for 12-classroom and gymnasium auditorium at Rayne High School.

RAYNE—Housing Authority let contract to Shelby Construction Co., New Orleans, at $498,153, for housing project, 76 units.

RUSTON—Mayor and Board of Aldermen let contract at $287,865 to Koller Construction Co., 612 Tradesmen National Bank Bldg., Oklahoma City, Okla., for new sewage treatment plant and overhauling existing sewage treatment plant.

ST. BERNARD PARISH—Board of Commissioners of Waterworks District No. 2 received low bid of $131,973 from Walker Construction Co., Cleveland, Texas, for installation of water distribution system and booster stations with pumps.

ST. LANDRY PARISH—Police Jury let contract to Sam Grimmett, Inc., Port Barre, at $3,160,746 for 2 timber bridges over Bayou Bourbeau between Wards 1 and 2 in St. Landry Parish.

SHREVEPORT—State Division of Administration will receive bids January 29 for new Nursing School at Confederate Memorial Medical Center, $1,200,000; Peyton & Bosworth and Lester C. Haas, Architects.

Highway Contractors Re-Elect Officers; Schedule Annual Luncheon-Meeting

Maryland Highway Contractors' Association early this month re-elected F. Talbott Gatch as its president, at the same time announcing that the annual luncheon meeting will be held February 14 at the Park Plaza Hotel, Charles and Madison streets, Baltimore.

Re-elected with Mr. Gatch were E. H. Nunn, of E. H. Nunn Construction Co., vice president, and R. H. Houghton, of R. H. Houghton, Inc., Annapolis, treasurer. Nathan L. Smith, Jr., of E. Stewart Mitchell, Inc., succeeds John H. Ensey, II, who has held the post for four years.

Thirty-six years in the construction business, Mr. Gatch, the association's president, is head of T. B. Gatch & Sons, Inc., contractors and quarrymen. He attended Calvert Hall College and Lehigh University and is a veteran of World War I. He served two terms in the Maryland State Legislature.

Fifteen members comprise the board of directors of the Maryland Highway Contractors' Association. They are: Carroll O. Stansbury; John L. Bennett; P. E. Burroughs; H. Guy Campbell; John H. Ensey; W. Jarboe Grove; George H. Langenfelder;

Also, E. Stewart Mitchell; Stephen M. O'Connell, who also is chairman of the entertainment committee; William H. Cullimore; John D. Sheetz; Pierce J. Flanigan, Jr.; Earl C. Robertson; T. Edgie Russell, and James O. Ridgely.

MARYLAND

Chesapeake and Potomac Telephone Co. of Baltimore plans expenditures of $1,653,000 for improvement and expansion of telephone facilities throughout Maryland.

ABERDEEN — Corps of Engineers, Baltimore, selected Jamison and Marcks, Baltimore, as Architects and Engineers, for additions to fire control building, Aberdeen Proving Ground, $950,300.

BALTIMORE—State Department of Public Improvements, Nathan L. Smith, announced remodeling interior of Sydenham Hospital to accommodate chronically ill patients, $200,000.

BALTIMORE—Merchants Terminal Corp. let contract to Davis Construction Co., 320 W. 24th St., for terminal warehouse, $700,000.

BALTIMORE—Board of Education plans four new Baltimore schools, includes, coed senior high school at Edmondson & Athol Aves.; junior high school at Park Heights & Ken Oak Aves.; elementary school at Gwynns Falls Parkway & Dukeland St. and elementary school at Roland Heights and Buchanan Aves.

BALTIMORE—Superior Construction Co., 514 St. Paul Place, construct 175 dwellings, $1,050,000.

BALTIMORE—Ashton Building Corp., 1817 Munsey Bldg., construct 39 dwellings, $273,000.

BALTIMORE—Belvedere Building Corp., 16 Park Ave., construct 80 dwellings, at $600,000.

BALTIMORE—Corps of Engineers selected J. L. Faisant & Assocs., Inc., H. Walton Redmile and Assocs., and Lawrence A. Menefee, Baltimore, as architects engineers, for rehabilitation of buildings, Fort Holabird, $1,430,000.

BALTIMORE—Retail Parking Centre, Inc. let contract to Piracci Construction Co., Inc., 2552 Woodbrook Ave., for auto parking structure, 229-31 W. Saratoga St., $300,000.

BALTIMORE — Board of Estimates let contract for following project:

Contr. No. 1153-A Cement concrete; P. Reddington & Sons, 2 E. Lexington St.,

(Continued on page 26)

Oklahoma Turnpike Holds Largest Bid Opening

The Oklahoma Turnpike Authority celebrated the first anniversary of its construction activity December 18 with its biggest contract letting thus far.

Combined approximate estimated cost of projects for the Oklahoma City-Tulsa road was more than four million dollars, according to General Manager H. E. Bailey.

On the same date a year ago the authority awarded its first building contract, 4.545 miles of Creek county roadbed on which the Stamey Construction Co., Oklahoma City, outbid 14 competitors from five states at $396,554.

Paving awards will close out the hard-surfacing requirements of the road except for the route through Sapulpa.

Most of the paving is in Lincoln county as follows:

8.618 miles extending northeast from 2.3 miles west of Chandler interchange, estimated cost, $889,340.

.434 mile at Chandler interchange, estimated cost, $114,845.

8.180 miles extending east from Santa Fe Railway north to Davenport.

.433 mile at Stroud interchange, estimated cost, $120,840.

Southern Construction Projects

(Typical and Important Reports Excerpted from Daily Construction Bulletin)

MARYLAND

(Continued from page 25)

$134,107.

BALTIMORE—Welsh Homes, Inc., 11 E. Fayette St., construct 125 dwellings, at $750,000.

BALTIMORE—Air Research and Development Command of the Air Force has authorization from Congress to construct a $5,446,000 permanent headquarters building in Baltimore area.

BALTIMORE—Cardenas Company let contract to Welsh Homes, Inc., 11 E. Fayette St., at $360,000, for 40 dwellings.

BALTIMORE — South Baltimore General Hospital let contract to Cogswell Construction Co., 513 Park Ave., at $258,800 for alteration and additions.

BALTIMORE COUNTY—James Keely Co., 4200 Edmondson Ave., will construct 90 dwellings, at $720,000.

BALTIMORE COUNTY—Baltimore County Department of Public Works has under consideration building of $315,000 sanitary sewer system.

BALTIMORE COUNTY—Baltimore County Board of Education, Towson, received low bid of $287,400 from William H. Sands, York Road and Washington Ave., Towson, for Rosedale Elementary School addition.

CHESAPEAKE BEACH — Calvert County Board of Education, Prince Frederick, received low bid of $235,500 from James J. Stehle, 179 Prince George St., Annapolis, for Chesapeake Beach Elementary School.

CUMBERLAND—Mayor & City Council let contract at $237,210 to George F. Hazelwood, Contracting Co., for additional filter facilities.

FREDERICK — Chesapeake and Potomac Telephone Co., Baltimore, let contract at $257,700 to Cummins-Hart Construction Co., for dial center.

HEREFORD—Board of Education of Baltimore County let contract to Morrow Brothers Inc., 2315 N. Charles St., Baltimore, at $1,483,500 for Hereford Junior-Senior High School.

HUGHESVILLE—Southern Maryland Electric Cooperative, Inc., let contract to Roy Richards Construction Company, Carrollton, Ga., at $368,421, for transmission line and substation.

LAUREL — Washington Suburban Sanitary Commission, Hamilton St., Hyattsville, received low bid $2,996,606 from Lewis & Bowman, Goldsboro, N. C., for Rocky Gorge Dam and pumping plant on Patuxent River.

PATUXENT RIVER — Navy Department, Public Works Office, Washington, D. C., received low bid of $1,096,000 from Ayers, Hagen, Booth, Inc., Providence, R. I., for H-8 hydraulic catapult, Patuxent River Naval Air Station.

ROCKVILLE—Montgomery County Council sold $7,525,000 bond issue to Halsey Stuart & Co., for various purpose bonds.

SPARROWS POINT, RR. BALTIMORE—Bethlehem Steel Co. has authorization from Defense Solid Fuels Administration for coke oven and coal chemical construction program, $8,151,000.

TOWSON—Baltimore County Commissioners let contracts for following projects:

Contr. 5159-R—for improvement to Northwood Drive from Tree Lane to Reuter Road in Yorkshire, 8th District, Carozza-Churchill, 1826 E. Joppa Rd. at $3,374.

Contr. 5186-R—For improvement to Rushley Road in Coventry, from Oakley Rd. easterly 600 ft. 9th District; Joseph A. Lavezza & Sons, 1208 Bank St., at $4,124.

Contr. 5171-R—For improvement to Hawthorne Rd. from Eastern Ave., easterly 795 ft. in Hawthorne, 15th District; Joseph A. Lavezza & Sons, 1208 Bank St., at $9,685.

UPPER MARLBORO — Prince Georges County Commissioners plans $6,600,000 school building program.

MISSISSIPPI

GREENVILLE — Corps of Engineers received low bid of $1,312,500 from Warren Brothers Roads Co., P. O. Box 549, Birmingham, Ala., for 150,000 squares of articulated concrete mattress.

GREENVILLE—City received low bid from Delta Paving Co., Inc., 4100 Northview Drive, Jackson at $799,528 for concrete floor system for Greenville Mills, Inc.

GREENVILLE — City received low bid from Ed Doughty Electric Co., P. O. Box 467, Columbus at $459,000 for electric power and lighting system for Greenville Mills, Inc.

INDIANOLA — Board of Trustees of Indianola Municipal Separate School Board, received low bid of $198,800 from Currie & Corley, Raleigh, for modern Colored Elementary School.

INDIANOLA — E. L. Malvaney, Archt., Jackson, has plans in progress for white high school, $375,000.

JACKSON—W. F. Holmes has N.P.A. approval for store, $561,693.

JACKSON—Mart 51, Inc., has N.P.A. approval for shopping center, $1,272,035.

JACKSON—Y.W.C.A. has N.P.A. approval for girls home, $425,595.

LOUISVILLE—City approved $362,000 bond issue for water and sewerage system improvements.

LOUISVILLE—City approved $350,000 bond issue for school construction.

MERIDIAN—Scott County Training School will receive bids late in January for new school.

MERIDIAN—Alfred Benberg, 4550 Main, Kansas City, Mo., archetect-engineer, selected by W. S. Dickey Clay Manufacturing Co. to prepare designs for $1,650,000 clay sewer manufacturing plant.

MOSS POINT — Moss Point Municipal Separate School District received low bid of $193,000 from J. C. McClendon, Jr., P. O. Box 807, Gulfport, for Magnolia Negro High School and $36,344 from Pittman Construction Co., 2925 Franklin Ave., New Orleans, for Charlotte Hyatt School.

NATCHEZ—E. L. Malvaney, Archt., Jackson, has plans in progress for school for white and one for negroes, each $600,000.

QUITMAN — Clarke County approved issuance of a $400,000 bond issue to double capacity of Quitman Manufacturing Co., knitting plant.

RANKIN COUNTY — Florence Telephone Co., has REA loan of $129,000 for improving and expanding rural telephone service.

VAZOO CITY—Municipally owned power plant bond issue of $1,700,000 approved at electrion.

MISSOURI

CLAYTON—Board of Education let contract at $123,238 to A. H. Haeseler Building & Contracting Co., 2346 Palm St., for addition to school, S. Meramec.

CONCORDIA — Reorganized School District No. 2 has final plans in progress for classrooms and administrative unit, $150,000.

FERGUSON — Board of Education, received low bid of $208,949 from Schneiderhahn Construction Co., 450 S. Brentwood Blvd., Clayton for new school and alterations.

JACKSON COUNTY—County Clerk, Kansas City, Mo., received low bid of $68,041 from Harry Goldberg, 2302 E. 12th St., for county road improvements, Proj. No. 52-4.

KANSAS CITY—Corps of Engineers plan 22 new reservoirs and 5 additional local levee projects to protect Kaw Valley; estimated between $250,000 and $275,000.

MILLER-RESCUE-HALLTOWN — Board of Education, Reorganized School District No. 2, let contract at $214,498 to Ozark Construction Co., 6th & Tyler, Joplin, for school improvements.

NEOSHO — New-Mac Electric Co-op. let contract to Reinhart & Donovan Co., 116 N. W. First St., Oklahoma City, Okla., at $486,475, for 134.7 miles of line.

NEW LONDON — Rails County Electric Cooperative Association let contract to Hoak Construction Co., 621-63rd St., Des Moines, Iowa, at $196,332 for 71.4 miles of line.

POLK — Southwest Electric Cooperative, 107 Springfield Ave., Bolivar let contract to L. P. & H. Construction Co., Linton, Ind., at $268,323 for 179.49 miles of line.

ROCK PORT—Atchison-Holt Electric Cooperative let contract Berger Construction Co., at $134,363 for 44.39 miles of line.

ST. LOUIS—Corps of Engineers, Kansas City, received low bid of $99,424 from Richard E. Harder Contracting Co., 1518 Sulphur Ave., for rehabilitation of Patrol Road, railroads and site clearing, Tyson Valley Powder Farm, St. Louis Ordnance Plant on Highway 66.

ST. LOUIS — White Baking Co., 4015 Papin let contract to Woermann Construction Co., 3800 W. Pine Blvd., for bakery addition, $100,000.

ST. LOUIS—Southwestern Bell Telephone Co. plans $5,000,000 toll-dialing center on west side of St. Louis business district.

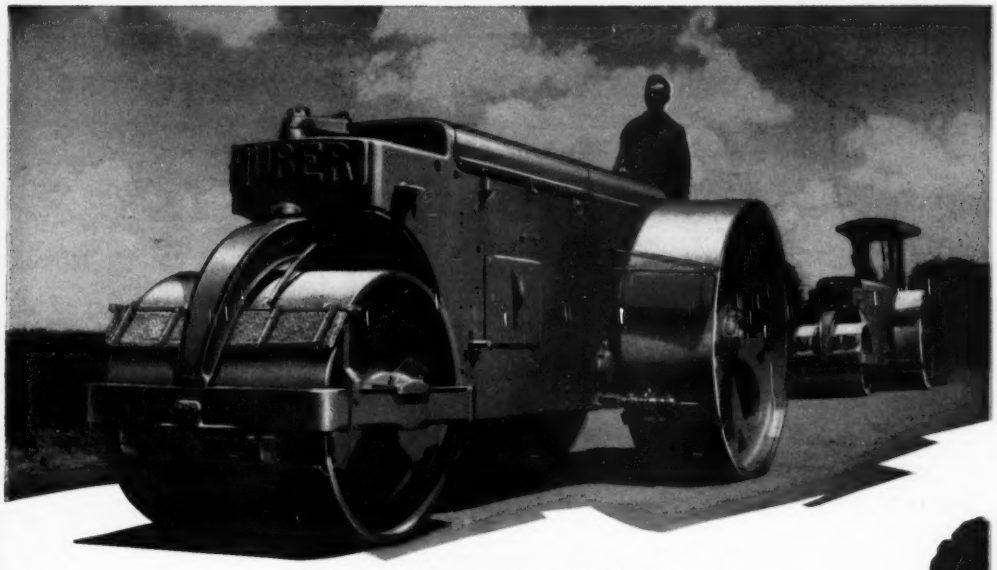
ST. LOUIS — Public Service plans chain link fence around unenclosed sections of Lambert-St. Louis Airport, $81,000.

ST. LOUIS—Kingsland Memorial Presbyterian Church congregation, 6719 Page Ave., plans educational building, $120,000.

ST. LOUIS—H. Kissel's Sons, 2140 E. Col-

(Continued on page 28)

Below—Prof. Thomas F. Hubbard, retiring president of the Maryland section of the American Society of Civil Engineers, congratulates his successor, George A. Carter, deputy director of public works of Baltimore. In the picture left to right are: Raymond C. Regnier, of Whitman, Requardt and Associates, who is starting his second year as secretary-treasurer; Professor Hubbard; Mr. Carter, and William B. Spencer, chief engineer of Consolidated Engineering Co., the new Maryland section vice president.



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Southern Construction Projects

(Typical and Important Reports Excerpted from Daily Construction Bulletin)

MISSOURI

(Continued from page 26)

lege Ave., submitted low bid of $162,327 for office and warehouse, Arsenal St.

SPRINGFIELD — Southwestern Power Administration, Petroleum Bldg., 5th & Boulder, Tulsa, received low bid of $657,199 from Killoren Co., Appleton, Wis., for substation and transmission line facilities.

NORTH CAROLINA

BELHAVEN — Woodstock Electric Membership Corporation has REA loan of $505,000 for 90 miles of distribution line.

CAMDEN COUNTY—Board of Education let contract at $56,145 to J. Raymond Ransom, Beaufort, for physical educational building.

CAMP LEJEUNE — Navy Department, Public Works Office, let contract to Reynolds Blower & Metal Co., Hickory, at $71,580 for replacing existing exhaust fans for galley range hoods (2nd Increment) Marine Barracks.

CHARLOTTE — Housing Authority let contract to McDevitt & Street, Box 1847, for housing project.

CHARLOTTE — Celanese Corporation of America, New York, N. Y., may construct a $4,000,000 structure on Fairview Ave.

CHARLOTTE—First Baptist Church congregation let contract to J. L. Coe Construction Co., at $346,494 for memorial educational building.

CHARLOTTE—Cornelius Electric Membership Corp., received low bid of $199,566 from Camco Construction Co., Sanford for REA lines.

CHAPEL HILL—University Motor Lodge Inc., let contract to John W. Coffey & Son, Raleigh, at $169,000 for motor lodge.

CHERRY POINT—Navy Department, Naval Base, S. C., let contract to Wesco Paving Co., Volunteer Bldg., Chattanooga, Tenn., at $1,733,640 for laying asphalt concrete runways and painting runway markers, Marine Corps Air Station.

CHERRY POINT—Navy Department, Naval Base, S. C., let contract to Nello L. Teer Co., Durham, at $2,969,603 for parking aprons and taxiways, Marine Corps Air Station.

CLINTON — Eastern Carolina Regional Housing Authority let contract to T. A. Loving & Co., Goldsboro, at $474,980, for housing project, NC 10-6 and NC 10-7.

CRAVEN COUNTY — Local Government Commission, Raleigh, sold $825,000 bond issue to R. S. Dickson & Co. & Associates for schools.

GREENSBORO—Edgcomb Steel Co., Charlotte, acquired 3½-acre tract in ORD for complete steel warehouse facility; cost including equipment and inventory approximately $500,000.

MOREHEAD CITY—Eastern Carolina Regional Housing Authority received low bid of $363,342 from G. E. Vinroot, Charlotte, for housing project, NC 10-4 & NC 10-5.

RED SPRINGS—Town let contract to J. C. Bledsoe, Blythewood, S. C., and Midstate Construction Co., Hickory, for water and sewer improvements.

ROCKY MOUNT—Peoples Bank & Trust Company, Trustees Ricks Estate, let contract to S. S. Toler & Son, at $104,732, for office building.

SALISBURY — First Evangelical and Reformed Church Congregation let contract to L. S. Bradshaw & Son, at $213,245 for church building.

SANFORD—Lee County Hospital Board of Trustees, Lee County Hospital, received low bid of $220,888 from Little Construction Co., 703 Builders Bldg., Charlotte, for additions and alterations to Lee County Hospital.

SPRAY—Union Carbide and Carbon Co., Fred Haggerson, Pres., New York, N. Y., planning to build a $33,000,000 plant near Spray, for production of synthetic fibers.

VANCE COUNTY — Corps of Engineers received low bid of $260,852 from Ballenger Paving Company, Greenville, S. C., for relocation of North Carolina secondary highway, Buggs Island Reservoir Project.

WHITEVILLE—Columbus Holding Corp. will purchase site and erect building to house a plant for manufacture of denim products.

WILMINGTON — Local Government Commission, W. E. Easterling, Sec., Raleigh, sold $620,000 bond issue to Halsey Stuart & Co. & Associates, for water improvements.

WILMINGTON—Local Government Commission, Raleigh, sold $450,000 bond issue to Halsey Stuart & Co. & Associates for storm sewer and $150,000 for sanitary sewers.

WILMINGTON — Local Government Commission, W. E. Easterling, Sec., Raleigh, sold $800,000 bond issue to Halsey Stuart & Co. & Associates for street improvements.

WILMINGTON — Corps of Engineers let contract to Norfolk Dredging Co., Norfolk, at $188,956 for maintenance dredging, Wilmington Harbor.

WINSTON-SALEM — Winston-Salem Public Library let contract to Fowler-Jones Construction Co., 510 Reynolds Bldg., at $309,684 for library building; Colter & Chappell Electric Co., 2101 Sunnyside Ave., at $52,525 for electrical work; Landingham Plumbing & Heating Co., at $18,000 for plumbing and at $22,900 for heating; Air Conditioning Corp., at $77,877 for air conditioning; Westbrook Elevator Co., Danville, Va., at $9,804 for elevator.

OKLAHOMA

BARTESVILLE — First Methodist Church plans sanctuary, $500,000.

CHEYENNE—Department of Agriculture, Fort Worth, Tex., received low bid of $136,114, from Pool Construction Co., Shawnee, Okla., for flood control detention reservoir, earthfill embankment, on Washita River watershed.

FORT SILL—Community Facilities Service, Division Engineers, T & P Bldg., Fort Worth, Texas, received low bid of $467,000 from Secor Building Co., 201 Plaza Court, Oklahoma City, Okla., for elementary school.

LAWTON—State Highway Commission approved $660,000 urban road project, providing for widening U.S. 62 to four lanes between its intersections with 23rd St. and U. S. 277.

MARLOW — Board of Education, L. L. Teakell, Supt., let contract at $93,552 to M. T. Shelton, 1827 S. 14th Chickasha, for elementary school.

OKLAHOMA CITY—City let contract to Imperial Paving Co., Oklahoma City, at $287,689, Alt. 1 and at $283,403, Alt. 2, for paving, Tulake Airport.

OKLAHOMA CITY — Oklahoma State Board of Agriculture received low bid from Haskell Culwell, 42 N. E. 28th, Oklahoma City at $63,000 for agriculture laboratory building.

SEMINOLE — Canadian Valley Electric Cooperative has $730,000 REA loan for 249 miles of distribution line.

SHAWNEE — City, received low bids for water improvements, Pittsburgh-Des Moines Steel Co., Dallas, Texas, at $104,764 for water tower and Sherman Machine & Iron works, 26 E. Main, Oklahoma City, at $372,787 for changes in distribution system, pipeline protection and repairs at filtration plant.

SOUTH CAROLINA

Corps of Engineers, Post Office Bldg., Savannah, Ga., let contract to Cleveland Electric Company, Jacksonville, Fla., at $280,855, for 115 KV switchyard, Clark Hill project.

AIKEN—City Council plans $500,000 waterworks system and expansion of present waterworks.

AIKEN — Aiken Electric Cooperative let contract at $296,289 to Leo T. Barber, Moultrie, Ga., for 104 miles of line.

ALLENDALE—School District 22, Housing & Home Finance Agency, Aiken, let contract at $206,200 to Southern States Construction Co., 1211½ Washington, Columbia, for temporary school, Project No. SC-52-C-204.

ANDERSON — J. H. Anderson & E. H. Webb, has N.P.A. approval for store, $150,000.

BARNWELL—School District 45, Housing & Home Finance Agency, Aiken, let contract at $133,318 to Dawson Engineerig Co., 10 Gillon, Charleston, for temporary school, Project No. 45 SC, 52-C-201, Unit B.

BARNWELL—School District 45, Housing & Home Finance Agency, Aiken, let contract at $233,850 to Southern State Construction Co., 1211½ Washington, Columbia, for temporary school, Project No. SC, 52-C-201, Unit A.

BLACKVILLE—School District 19, Housing and Home Finance Agency, Aiken, let contract at $178,610 to Dawson Engineering Co., 10 Gillon, Charleston, for temporary school, Project No. SC, 52-C-202.

CHARLESTON — Charleston County let contract to Skinner & Ruddock, Inc., P. O. Box 750, Charleston at $986,000 for Charleston County Hospital.

COLUMBIA—Columbia Linen Service has N.P.A. approval for office and plant, $250,000.

COLUMBIA — Central Electric Power Coop, Inc., let contract to Sumter Bldrs., Inc., at $759,580 for REA lines, SC 50-A Santee, Sec VI.

COLUMBIA — State Highway Department has N.P.A. approval for office building, $1,800,000.

COLUMBIA — Board of School Commissioners received low bid of $204,500 from George R. Price, Columbia, for addition to Brennen Elementary School.

FAIRFAX—School District 44, Housing & Home Finance Agency, Aiken, let contract at $85,268 to Dawson Engineering Co., 10 Gillon, Charleston, for temporary school Project No. SC, 52-C-205.

FORT JACKSON — Corps of Engineers, Charleston, let contract to Mitchum Construction Co., Columbia at $112,165, Item 1-1A, for rebuilding service club, type SC-3.

FORT JACKSON — Corps of Engineers, Charleston, received low bid from Mitchum Construction Co., Columbia at $108,125 for rebuilding service club.

LANCASTER—City received low bids for sewerage system improvements as follows: Division No. 1, Sloan Construction Co., Inc., Box 747, Greenville, S. C., at $450,873; Division No. 2, Kahn & Jackson, Box 595, Columbia, at $66,560; and Division No. 3, Glenn Construction Co., Box 598, Charlotte, N. C., $483,635.

SUMTER — Corps of Engineers received low bid from Cecil's, Inc., 290 W. Henry St., Spartanburg, at $221,497 for airmen's dormitories, Shaw Air Force Base.

TENNESSEE

CHATTANOOGA — Shelby Construction Co., Inc., New Orleans, La., let sub-contracts for Spencer J. McCallie Homes, Tenn., Proj. 4-4, cost, $3,297,000; concrete forms, Chattanooga Steel Erectors, Betts Engineering Co., W. C. Teas Company, S. G. Goodner, Dave L. Brown, Cyclone Fence Division, all of Chattanooga, Tenn., Modern Painting Co., Miami, Fla., Arnold Plumbing Co. Memphis, Tenn., Louisiana Fireproofing Co., New Orleans, La., Miller Bros. Flooring Co., 5014 San Jacinto St., Houston, Tex.

CHATTANOOGA — Nixon Machinery & Supply Co. let contract to Verhey Construction Co. at $20,140 for addition.

CHATTANOOGA — Welsey Community Center let contract to T. U. Parks Company for addition to center at $140,141.

COLUMBIA—Shea Chemical Corp., Lowell, Mass., plans for $3,000,000 di-calcium phosphate plant at near-by Goodwin.

McMINNVILLE — McMinnville Electric Service has N.P.A. approval for service bldg., $199,876.

MEMPHIS—Baron Hirsch Synagogue has N.P.A. approval for synagogue, $1,054,589.

MEMPHIS—Jack A. Belz has N.P.A. approval for parts depot, $170,000.

MEMPHIS—H. F. Vann & Son submitted low bid for service building, Audubon Park.

MEMPHIS—Poplar Highland Plaza, has N.P.A. approval for stores, $750,000.

MEMPHIS—Y.M.C.A. has N.P.A. approval for building, $667,725.

NASHVILLE — Corps of Engineers received low bid of $9,164,098 from J. A. Jones Construction Company and Charles H. Tompkins Company, Inc., of Charlotte, N. C., and Washington, D. C., for construction of Old Hickory Lock and Dam.

NASHVILLE — Corps of Engineers plans construction of canal between proposed Lower Cumberland Reservoir and Kentucky Reservoir on Tennessee River, $145,000.

NASHVILLE—Bond-Chadwell Co. has NPA approval for terminal warehouse, $183,500.

NASHVILLE—Gain-Sloan Co. has N.P.A. approval for department store, $993,295.

TULLAHOMA—U. S. Engineer Office, Box 2091, received low bid from Robert E. Maxey Construction Co., Box 2006, Tullahoma, at $147,336 for cafeteria building, Arnold Engineering Center.

WAYNESBORO—City received low bid of $274,687 from G. E. Moore Co., Box 1069, Greenwood, S. C., for sanitary sewers and sewage treatment plant.

WINCHESTER—City let contracts for following water distribution system: G. E. Moore Co., Greenwood, S. C., to install distribution system at $137,805; Bush Building Co., of Nashville, for chemical building at $109,906 and Chicago Bridge & Iron Co. of Atlanta, Ga., for installation of large water tank at $52,950.

TEXAS

Texas Gas Transmission Corp., plans 407 miles of new pipe lines in Midwest and South.

Corps of Engineers will advertise early this year a new contract for completion of earth embankment and construction of concrete spillway, $4,000,000 recently appropriated for Belton Dam and reservoir project.

AUSTIN—University of Texas let contract at $1,179,000 to Fisher Construction Co., 4711 Greeley, Houston, for law building.

AUSTIN—University of Texas received low bid of $1,179,000 from Fisher Construction Co., 4711 Greeley, Houston, for law building.

BRENHAM — Sisters of St. Francis have federal aid of $300,000 for hospital, $600,000.

BROWNSVILLE—City has working drawings in progress, to release for bids about March 1, for Fort Brown Memorial Civic Center, $800,000.

BRYAN—Sisters of St. Joseph's, Brenham, have federal aid of $400,000 for hospital, $900,000.

CLARKWOOD — Celanese Corporation of America, M. H. Allen, Plant Engr., let contract to E. Eisenhauer, 1205 N. Tancahua St., Corpus Christi at $371,000 for office and laboratory.

COLLEGE STATION—A & M College of Texas let contract to Andrews-Parker, Inc., Box 927, Bryan at $567,508 for veterinary hospital.

CORPUS CHRISTI — Crippled Children's Hospital, plans hospital, $1,000,000.

DALLAS — Congregation Shearith Israel, Eakin St. at Park Avenue plans Synagogue-Educational Building structure, $750,000.

EL PASO — Hotel Dieu Hospital, Sister Mathilde, Administrator, received low bid from Robert E. McKee, General Contractor, Inc., P. O. Drawer 562, El Paso at $1,017,400 for North Annex addition to Hotel Dieu Hospital.

FORT WORTH—Fort Worth Independent School District, D. R. Marsh, Supt., let contract at $434,860 to James T. Taylor & Son, Inc., P. O. Box 225, for junior high school.

FORT WORTH—City plans new water filter plant, $10,000,000.

GARLAND—City plans sewage treatment plant, $400,000.

HARLINGEN — Housing Authority plans 150 unit housing project, $1,125,000.

HOUSTON—Phillips Petroleum Co., K. S. Adams, Chmn., announced construction starting work on petro-chemical plant on a 500-acre tract on Houston Ship Channel.

HOUSTON—City received low bid of $6,215,295 from San Jacinto Equipment Co., 1107 Girard, Houston, and Elmer C. Gardner, Inc., 2704 Sachett, Houston, for San Jacinto River Dam.

HOUSTON—Southern Pacific Railroad Co. plans freight terminal, $6,000,000.

HOUSTON—City and Harris County, have federal aid of $1,500,000 for 400-bed City and County General Hospital, $6,000,000.

JOURDANTON — Jourdanton Independent School District, plans school building program; $500,000 bond issue voted.

KOUNTZ—Hardin County, Fletcher Richardson, Judge, received low bid of $449,560 from Linbeck Construction Corp., Houston, for Hardin County Hospital.

KOUNTZ—Hardin County, Fletcher Richardson, Judge, let contract to Linbeck Construction Co., P. O. Box 13007, Houston at $449,560 for hospital.

LAMB COUNTY — Southwestern Public Service Co. plans Plant "X", 150 kilowatts of capacity, near town of Earth, Tex.; company plans $65,600,000 for construction over next 3 years.

LAREDO—Laredo Independent School District approved $1,500,000 bond issue for building program.

MIDLAND—Midland County plans exhibit hall, $350,000.

Midland—Midland County plans trunk road in Tex.-Harvey & Driver Fields area; paved road from US Highway 80 to Warfield connecting with proposed road from Pegasus oilfield in Ector County; $500,000 road bond issue voted.

MIDLAND—First Baptist Church Congregation plans building, $1,000,000.

MULESHOE—Bailey County Electric Cooperative Association has REA approval of $487,000 loan for 37 miles of distribution lines.

ODESSA—Ector County School District approved $1,650,000 bond issue for elementary school buildings and addition to high school.

RANKIN — Upton County, G. H. Fisher, County Judge, approved $1,050,000 bond issue for road improvement.

SAN ANTONIO—G. S. McCreless, 1102 Fair Ave., will construct Southside shopping center, South New Braunfels & Fair Avenues, $500,000.

SAN MARCOS—San Marcos Academy plans expansion program, $500,000.

SCHULENBURG — Schulenburg Independent School District, James Maddux, Supt., plans school plant improvements; $300,000 bond issue voted.

WACO—Corps of Engineers, Galveston, received low bid of $3,660,000 from Care County Homes, Inc., c/o Continental Mortgage Co., Memphis, Tenn., for Cavu Village Military housing project; F.H.A. Proj. No. 112-80003 Air-1.

WACO—McLennan County let contract to Farnsworth & Chambers Co., Inc., P. O. Box 74, Houston, at $787,610 for County Fair Buildings, Old Richfield Airport.

WACO—Housing Authority plans 150 unit low-cost housing project, $2,872,000.

WESLACO—City plans $300,000 bond issue for sewage and drainage projects.

WICHITA — City let contract to Stuckey Construction Co., 1515 Kemp Blvd., at $301,833 for work on Kell Blvd.

WYLIE & LAVON — Gulf, Colorado & Santa Fe Railway Co., W. T. Donoho, Chief Engr., Galveston, received low bids of $779,705 from J. W. Mooreman & Son, P. O. Box 491, Snyder, for relocation of 7.4 miles of railroad, between Wylie and Lavon.

VIRGINIA

Esso Standard Oil Co. plans new $400,000 bulk storage plant in Warwood.

ARLINGTON COUNTY — Board of Education, 1426 N. Quincy St., Arlington, let contract at $265,000 to Schriber Construction Co., Arlington, for Kemper Elementary School.

BLACKSBURG—Blacksburg Baptist Church Congregation let contract to J. M. Turner & Co., Inc., Roanoke, Va., at $198,000 for church building.

BRUNSWICK COUNTY—Board of Education received low bid of $231,200 from Mottley Construction Co., Farmville, for Southside Elementary School.

CHESTERFIELD COUNTY—Corps of Engineers, Norfolk, Va., received low bid of $169,000 from J. W. Enochs, Hopewell, Va., for Bellwood Apartments.

CHESTERFIELD COUNTY — City let contracts for covering water filtration plant and falling creek dam as follows: filter plant, Thorington Construction Co., Richmond, at $128,760; dam, Thorington Construction Co., at $50,912; filters, Roberts Filter Mfg. Co., Darby, Pa., at $30,280, and pumps, Sydnor Pumps & Well Co., Richmond, $11,588.

ELIZABETH CITY COUNTY—Board of Education let contract at $767,740 to Mottley Construction Co., Farmville, for new negro junior high school.

FAIRFAX—Fairfax County School Board received low bid of $148,260 from Eugene Simpson & Brother, Alexandria, for seven-room addition to Chesterbrook Elementary School.

FRANKLIN—City let contract to Z. Turner Construction Co., Suffolk, at $124,500, for Municipal Building.

FRANKLIN & PATRICK COUNTIES—Corps of Engineers received low bid of $349,868 from Ralph E. Mills, Salem, Va., for relocation-Virginia route 623, Smith River-Ryans Branch, Philpott Reservoir Project.

HOLLAND—W. T. Clark & Co., R[illegible]

(Continued on page 51)

January 31 Set As Date For Maryland Engineers Meeting

The Maryland Association of Engineers will hold its twenty-third annual meeting January 31 at the Emerson Hotel, Calvert and Baltimore streets, Baltimore, under the leadership of President William P. Fannon and First Vice President Walter C. Hopkins.

According to the announcement by Mr. Hopkins, who is deputy chief engineer of the Maryland State Roads Commission, the program will embrace interesting and instructive discussions and illustrations on highway soil engineering, hghway illumination, naval civil engineers, underwater tunnels and substructure construction.

President Fannon, Baltimore's sanitation engineer, will open the gathering at 9 a. m., with Mr. Hopkins calling the meeting to order. First session on the agenda will be a film on highway soil engineering by the Federal Bureau of Public Roads. The film is described as both educational and interesting.

A. F. Dickerson, manager of the lighting division of General Electric Co., will talk at 11.15 on "Saving Lives with Traffic Safety Lighting." Mr. Dickerson is head of the tremendous plant in Massachusetts where all kinds of lighting equipment, rectifiers and intricate devices are produced, and is an authority on the subject he will discuss.

After a luncheon recess, Mr. Fannon will convene the afternoon session at 1.55 p. m. Three addresses are scheduled in the three subsequent hours, with a late afternoon recess scheduled for 4.45 p. m. and refreshments at 6 p. m.

Rear Admiral J. F. Jelley, chief of the Bureau of Yards and Docks, United States Navy, will talk on "The Navy Civil Engineers," this to include a discussion of not only the naval civil engineer corps but also the famous "Sea Bees."

"Subaqueous Tunnels" will be the subject of the address scheduled at 2.45 p. m. by Ole Singstad, of the New York consulting engineering firm of Singstad & Baillie. Mr. Singstad is an internationally famous engineer who has specialized in constructon and design of tunnels.

He has been identified with practically all the large tunnels constructed in this country in recent years. He was engineer of design for the Holland tunnel and chief consulting engineer on the Lincoln tunnel projects. Other of his projects are located in California, Detroit, Belgium, and New York.

David Bonner, vice president of Frederick Snare Corp., one of the contractors for the pier work on the Chesapeake Bay bridge, will deliver an address on that subject. For the past ten years he has directed heavy construction for the New York concern.

His experience covers many other fields, in addition to piers, wharves and bridges, including highway construction, and as vice president and general manager of the Metropolitan Sand & Gravel Co., largest company of its kind in New York City.

Officers of the Maryland Association of Engineers, in addition to Mr. Fannon and Mr. Hopkins, are: Ben Dyer of Hyattsville, second vice president; Bernard F. Suwall, executive secretary; Christian J. Lortz, treasurer.

Earl H. Brengle and Charles M. Foard are field secretaries. Directors include Arthur W. Tayman and J. Eldridge Wood, both past presidents, and Russell Schultz and James H. McKay, the latter highways engineer for the city of Baltimore.

N.S.P.E. and Professional Unity

by
Paul H. Robbins
Executive Director
National Society Professional Engineers

The title of National Society of Professional Engineers seems to ask for a definition of the word professional. Webster's Dictionary lists profession as "the occupation, if not commercial, mechanical, agricultural, or the like, to which one devotes oneself; a calling" and professional as "characteristic of or conforming to the standards of a profession."

N. W. Dougherty, Dean of Engineering, University of Tennessee, in an article in the *American Engineer* magazine, listed the three common qualities of a learned professional as follows: "They use their mental abilities, they are actuated by a service motive, and they hold a relation of confidence."

Whatever the semantic implications of the words profession or professional, engineers have realized over a period of time, and particularly for the past fifty years, that they should strive for recognition as a profession with the attendant responsibilities and acknowledgment.

Engineers Faced Problems

At the beginning of the Twentieth Century, engineers began to realize that they had two large problems to face before their professionalism could be accomplished. The first was the fragmentation of their activities. Engineering societies were organized to benefit one particular branch of engineering rather than the field as a whole. Secondly, the word engineering had no clear definition; from the beginner to the experienced engineer there were wide ranges of responsibility. Railroad workers, construction men, draftsmen and, in fact, anyone who chose to use the title, were known as engineers.

N.S.P.E. Formed in 1934

As a direct outgrowth of the need for unity and professionalism, the National Society of Professional Engineers was organized in 1934. It was felt that the engineering profession had no voice to speak for it on economic, social, ethical, and professional problems of common concern. N.S.P.E. was born out of this necessity through the foresight of four separate and autonomous existing engineering societies in New Jersey, New York, Pennsylvania and Connecticut. From this modest beginning, N.S.P.E. has developed into an organization of 24,000 registered engineers, most of whom hold membership through 38 member state societies, themselves autonomous, but constituting the National Society which works for the common betterment of all. Registration is the only requirement for membership in the society.

Flexible Organization

N.S.P.E. is organized on three levels—national, state and chapter. This democratic flexibility enables the society to tackle problems both limited and widespread in scope, and at the same time it offers membership to the individual in distinct and semi-autonomous so- The authority for N.S.P.E. comes members through duly-elected representatives at all three levels.

Since its establishment, N.S.P.E. has backed the enactment of state registration laws until all states now have them, as well as the District of Columbia whose bill was recently made law. In addition, Puerto Rico, Hawaii and Alaska have such laws.

Canon of Ethics Adopted

Moreover, since its development, N.S.P.E. has adopted a Canon of Ethics for the Professional Engineer and brought about increased recognition for the profession through pertinent federal legislation. At all times the National Society has worked toward recognition of the engineer as a professional man.

The interests of N.S.P.E. have not been merely pointed to the development of the society or the profession, but are designed to afford the public protection against unlawful and unqualified engineering practices as well.

Among the other aims of N.S.P.E. today are: The effective use of engineers in national defense; better engineering education, and assistance and professional recognition for the young engineer.

Analyze Proposed Laws

The N.S.P.E. Legislative Committee and its counterparts in each of the State Societies analyze proposed legislation to see if it promotes the welfare of the engineering profession, believing that what helps the profession is in the best interests of the public. A full-time legislative analyst keeps the members informed on the latest developments in Congress, the state legislatures, and in the executive departments of the government, and a "Legislative Bulletin" is issued periodically.

The place of the professional engineer in national defense was demonstrated in the recent war when it was seen that large numbers of competent engineers, properly utilized, were necessary to a successful defense effort. It was obvious from the recent experience that engineers were not utilized to the fullest possible extent, commensurate with their abilities.

Procurement Policies Studied

Serious questions have also been raised as to procurement methods used to obtain engineers. In addition to use during the war, the policies of the defense establishment pertaining to engineers are clearly of the greatest concern to the engineering profession. N.S.P.E.'s military affairs committee is making a continuing study of these problems to assist the development of engineers' contributions to national defense, in war and peace.

Improved engineering education is of vital concern to N.S.P.E., as it feels that the profession will be only as good as the engineers of the future. N.S.P.E. cooperates with the American Society for Engineering Education and the Engineers Council for Professional Development, the principal accrediting agency for engineering schools, as well as many other societies on problems of mutual interest.

Promote Faith in Profession

Recognizing the many problems facing young engineers today and the importance of these men to the future of our profession, N.S.P.E. has established a Committee on Young Engineers whose objective is the strengthening of faith in the profession as the young engineer goes through the hard school of experience. The committee is paying special attention to those starting as employees of large industrial concerns and it is working with industry to obtain recognition of their professional status.

Under our state registration laws, graduation from an accredited engineering school is not sufficient to qualify a person for registration as a professional engineer. He must undergo a period of practical experience before the state will certify that he is fully qualified.

"Engineer-in-Training"

N.S.P.E. believes that these men should have legal recognition and should be associated with the professional movement during their formative years. The National Society has recommended that state societies press for enactment of Engineer-in-Training provisions in their state laws which would give the engineering graduate recognition under the law and enable him to take the technical and academic phase of his examination while those subjects are still fresh in his mind. To encourage professionalism, provision is made for his membership at the National and State level.

Goals of N.S.P.E.

There has been some discussion to the effect that N.S.P.E. is duplicating the work of the technical or founder societies. Such is not the case because technical societies are concerned primarily with the technological advancement of their particular branch of engineering, whereas N.S.P.E. is concerned solely with the professional, social, and economic problems common to all engineers. N.S.P.E. feels that each is vitally necessary, as they provide the professional engineer with two organizational arms. In this way he is able to effectuate a balanced relationship as to technological advancement and professional status.

Public Relations Pushed

The last link in the registration law being forged, N.S.P.E. is now directing its energies toward a public relations campaign to inform the public of the many services performed, but unheralded, by the professional engineer. This campaign will help to affect not only the recogni-

(Continued on page 51)

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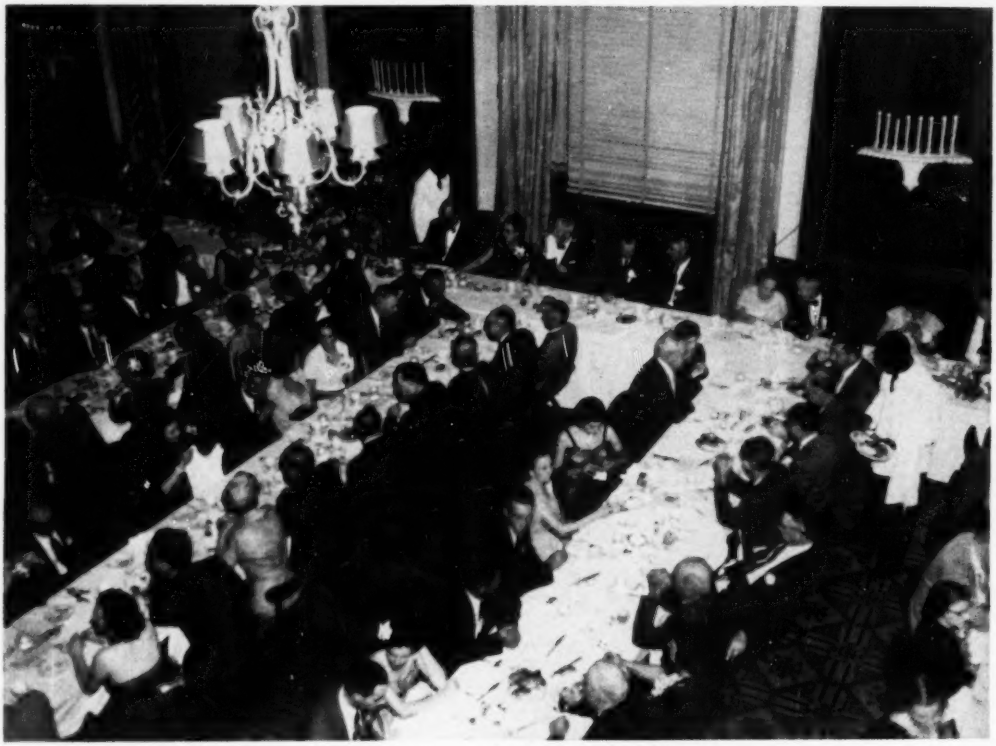

Above—View of annual banquet on closing night of S.A.S.H.O. convention.

Southeastern Association of State Highway Officials Hold Meeting at Charleston

Importance of transportation in National Defense, the necessity of public support in planning and carrying out a highway program meeting today's needs, and the growing shortage of trained engineering personnel were among vital highway matters considered by the Southeastern Association of State Highway Officials at their tenth annual meeting held in Charleston, S. C., December 5 and 7.

The convention was attended by 570 registered delegates representing the following states in the Association: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia.

McMillan Elected President

Claude R. McMillan, chief highway commissioner of the South Carolina Highway Department, was elected president for the ensuing year. He succeeded D. H. Bray, state highway engineer for the Kentucky Department of Highways. R. B. Richardson, director of the Louisiana Department of Highways, New Orleans, was elected vice-president to succeed Mr. McMillan, and J. Kenneth Crowson, secretary-treasurer of the South Carolina Highway Department, was named secretary-treasurer of the Association to succeed A. O. Neiser of Kentucky.

The delegates accepted an invitation from the Louisiana delegation to meet in New Orleans next year at a time to be announced later.

Prominent Speakers Heard

Among speakers on the program were Lawrence S. Tuttle, assistant to the commissioner of the U. S. Bureau of Public Roads, who addressed the association on "Recruiting, Training, and Holding Engineers"; Light B. Yost, director of field operations for General Motors Corp., whose topic was "The Highway Problem —Everybody's Business," and M. Richard Felts of Atlanta, regional administrative officer of the Federal Civil Defense Administration, who spoke on "Civil Defense and the State Highway Departments."

The association adopted a number of resolutions on major issues confronting highway departments. One reviewed the critical situation confronting the preservation and continuous rehabilitation and reconstruction of essential highway facilities, and made recommendations for relief from conditions now seriously handicapping the "proper construction, maintenance and administration of our highways." This resolution was in line with "Resolution No. 1" adopted at the recent meeting in Omaha of the American Association of State Highway Officials.

The association viewed with concern the "serious and critical need for obtaining and recruiting more trained engineering personnel to carry on the Highway Modernization and Replacement Program," and recommended the following steps to meet the problem:

1. Increased salary ranges;
2. The establishment of personnel merit systems by those state agencies not now having such systems;
3. Establishment of adequate retirement systems by those states not now having such systems.

Encourage Highway Careers

The association noted that state highway departments are not now in position to compete with industry and other sources of employment for graduate and

trained engineers, and expressed the belief that these recommendations, if adopted, would "encourage graduate and trained engineers to make careers in highway department work."

At the annual banquet on the closing night of the convention, the association presented certificates to Past Presidents Bray (1951) and S. T. Roebuck (1950) of Mississippi in recognition of their services to the organization.

The convention program embraced several entertainment features, including a reception by the South Carolina Motor Transportation Association and a reception and dinner by the Carolinas Branch of the Associated General Contractors of America. Ladies' entertainment included a luncheon and tour by the city of Charleston and a reception and luncheon by *Carolina Highways*, magazine of the South Carolina State Highway Department.

Engineer Dearth Cited

Speaking on the shortage of engineers, Mr. Tuttle said that the Engineering Manpower Commission of the Engineers' Joint Council, representing five leading engineering societies, recently made a study of the situation and came up with "some truly shocking figures."

The study showed, he said, that the present deficit of engineers is well over 60,000, and it is estimated that the annual need over the next ten years is 30,000. He added that the number of engineering graduates during this period will be far below this estimated annual need, and will not equal it until about 1965. It is obvious, however, that the next three years are going to be the lean years indeed, and that the next year, 1952, when only 12,000 graduates may be available for employment, will be particularly bad, he said.

Basic Reasons Given

One of the basic reasons for the general shortage of engineers is the belated and still far from general recognition of engineering as a profession comparable to law and medicine, and the associated fact that engineering services receive less return than the other professions in the form of income and prestige, he said.

To correct the situation, the speaker appealed for a personnel policy which would provide the engineer an "adequate return throughout his professional life," and such inducements as:

1. A personnel agency with adequate powers, staff and appropriations;
2. Admission to the service by proper competitive tests;
3. A probationary period preceding final appointment;
4. Probation based solely on merit and fitness;
5. In-service training;
6. A classification plan which places employes in proper groups and grades based on work performed, and with appropriate grade titles;
7. Salary schedules with minimum and maximum salary for each grade of the classification plan;
8. Service records to serve as a basis for advancement and promotion;
9. Reasonable security against unjust dismissal or demotion;
10. Good working conditions, uniform hours of work, vacation and sick leave privileges, and
11. A financially sound retirement system.

It was pointed out that several of the states have merit systems for the selection of personnel, and retirement systems, and the association's goal should be to have all states adopt such systems to encourage engineers to make careers in highway department work.

"America," Mr. Yost said, "is often referred to as a nation on wheels; but the wheels are on 'roads.' The end product of your efforts and ours—highway transportation—serves the public interest only to the extent that both rolling stock and roads provide the utmost in safe, economical and convenient movement."

Public Support Important

In this connection, he added, no one can overlook the importance of public support. Not always so obvious, he added, are the things that must be done to merit and to get it.

The first step is to appraise public opinion. Local variations in conditions require that such an appraisal on the subject of highways be made in each state, but three things seem universally true.

"First," he said, "the public is quite unhappy about critical deficiencies in highways of today. They are proud of the vast network of roads we have—and conscious of the tremendous strides that have been made—but they are not satisfied any more than you are. They know that many of our roads must be modernized to help cut the tragic toll of accidents and the high cost of congestion.

"Secondly, much of the public is somewhat confused about the highway situation. There are many misconceptions which have found wide currency. There are important gaps in public knowledge of the basic facts. This is especially true in the area of highway finance.

"Thirdly, the public is often indisposed to take an active, positive interest in such subjects as this unless effectively stimulated to do so. The majority usually doesn't become vocal in an organized way unless and until things get very bad—or effective leadership is provided.

"Selling" Campaign Needed

"These three facts indicate that there is a pressing need for an aggressive, intelligent and sustained public relations or 'selling' campaign. The public appetite for better roads has already been whetted—what remains is the job of getting across to the public how that appetite can be satisfied most quickly and efficiently," Mr. Yost continued.

"The priority of defense production in the present emergency necessarily precludes a 'business as usual' approach in many fields—including road building. Many normally desirable projects must be deferred or scaled down. However, immediate attention to our most critical highway needs is imperative in order that highway transportation may fulfill its vital defense role," he added.

Embraces Two Phases

The public relations job has two important interdependent phases, he explained. The first is to give the public a highway program worthy of support. You can't get support for an unsound or outdated highway program any more than we could for a badly built automobile. . . . The second phase is the job of public education. The highway story must be gotten across to the people. In this connection, he said, General Motors was cooperating with highway departments in two ways, through cooperative support of national organizations to help mobilize public support and to extend professional assistance to official highway agencies, and secondly, by specific projects sponsored by individual companies. An example of the last is "Let's Get Out of the Muddle," which film, produced by General Motors, is designed to mobilize the active support of the company's nation-

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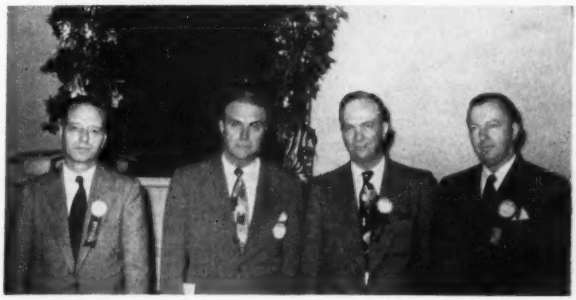
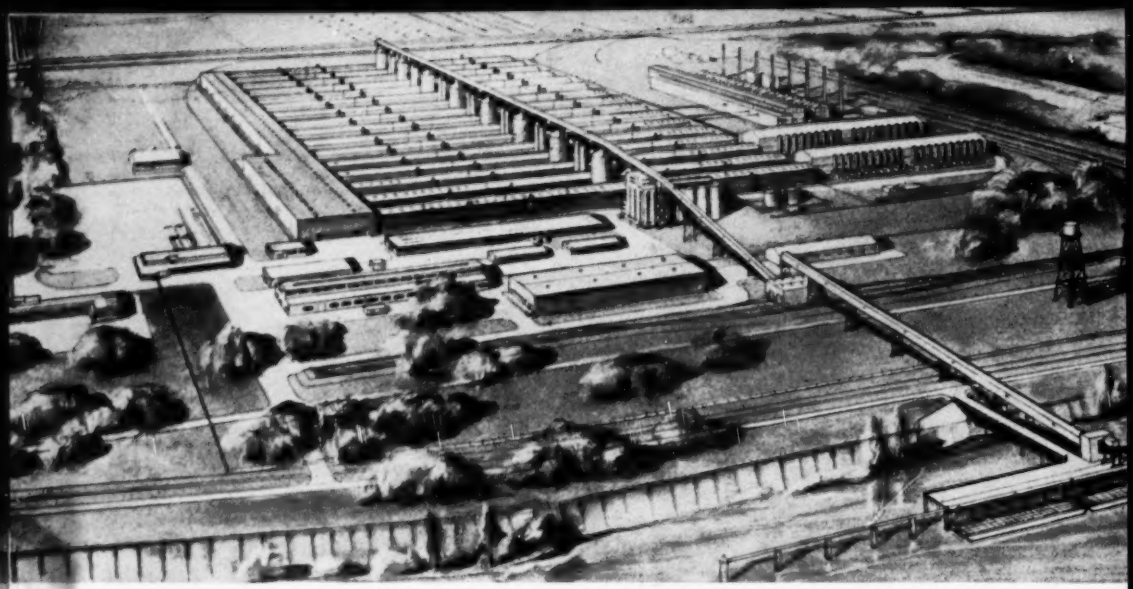
Below—New and retiring officers of Southeastern Association of State Highway officials—Left to right: A. O. Neiser, of Kentucky, retiring secretary-treasurer; R. B. Richardson, of Louisiana, new vice-president; Claude R. McMillan, of South Carolina, new president, and D. H. Bray of Kentucky, retiring president. J. Kenneth Crowson of South Carolina, the new secretary-treasurer, was unable to attend the convention because of illness.





Above—Perspective showing the $150,000,000 Chalmette, La. aluminum reduction plant as it will appear when finished by mid-1953. A part of Kaiser Aluminum & Chemical Corporation's $200,000,000 mine-to-metal expansion program, the plant involves construction of approximately 75 buildings with 35 acres of floor space. Its capacity will be 400,000,000 pounds a year. Approximately 2,000 workers will be employed.

Construction Continues at Chalmette Plant as First Pour of Metallic Aluminum Is Made

Facilities of the 400,000,000-pound-a-year Kaiser Aluminum reduction plant at Chalmette, Louisiana, near New Orleans —which began production in December— are on a scale with its great contribution to the nation's vital aluminum supply.

To perform this production job on the 280-acre site bordering the Mississippi River just east of New Orleans will require about 75 buildings with nearly 35 acres of floor space, some 3.5 miles of rail trackage, 60,000 square yards of roadways and innumerable items of equipment, both large and small.

All these facilities will be needed to keep the heart of the plant—eight potlines containing 1,152 electrolytic cells—at their task of converting alumina to metallic aluminum at the rate of 46,000 pounds an hour, 24 hours a day.

Major Facilities Described

Major facilities of the plant are as follows:

The pot room buildings which besides being the focus of operations, form the plant's most massive feature. They comprise 16 pot room buildings — two for each potline—linel up side by side. Each "room" measures 960 feet long by 59 feet wide and contains 72 Soderberg-type pots, or electrolytic cells, which individually produce aluminum at a rate of 40 pounds an hour.

In this process, each pot shell is insulated with alumina and other material and then lined with carbon to serve as the cathode. A recess in this lining holds the electrolytic bath, made up of cryolite and alumina.

Resting on the cathode shell is a superstructure which supports the anode, initially composed of liquid carbon paste. When the anode is progressively lowered to maintain even immersion in the bath as the carbon is consumed in the continuous reduction process, the paste is baked solid by heat from the pot itself. New paste is added from above at intervals.

Pots 21.5 Feet Long

Cryolite and alumina are introduced in bath through hoppers and spouts on the superstructure. Overall, each pot measures about 21.5 feet long by 11.5 feet wide, and stands 13 feet 4 inches high.

The direct electric current required in the aluminum reduction process is supplied through a system of aluminum bus. For the Chalmette plant, about 12,000,000 pounds of aluminum plate is being fabricated into bus bars.

Elaborate air exhaust and air cleaning systems are installed in each pot room.

The metal service building connects the bases of the pot rooms and provides facilities for pouring molten aluminum into pigs up to 1,000 pounds and handling their storage and shipping. It measures 1,650 feet long and is 63 feet wide for most of its length; at one end the width is more than doubled to house holding furnaces for molten metal and casting equipment.

To furnish the electric power needed to produce 400,000,000 pounds of aluminum a year, Kaiser Aluminum's new Chalmette reduction plant will generate its own electricity in two power installations with a combined capacity of 478,200 kilowatts. This is a volume equal to nearly one-half the installed capacity of Hoover Dam, the highest dam in the world.

Natural gas from nearby fields is the fuel for both power plants. Otherwise, they are completely different in design and operation.

One is a steam plant generating alternating current to supply six potlines, and general plant requirements. The other uses radial gas engines to drive direct current generators supplying electricity to the other two potlines.

Features of Power Plants

Features of the power installations are as follows:

The steam power plant is of the semi-outdoor type. Fifteen Foster-Wheeler outdoor-type steam generators each produce 225,000 pounds of steam per hour at 900 pounds per square inch at operating temperatures. A common stack serves each pair of boilers. During normal full load operation the boilers will use 109,728,000 cubic feet of gas a day.

Sixteen General Electric turbo-generators—fourteen with a capacity of 25,000 kilowatts each and two of 11,250 kilowatts each—will be housed in a building 750 feet long and 55 feet wide. They generate 13,800-volt alternating current.

The fourteen large units will be hydrogen-cooled. The two smaller units will supply alternating current to the Nordberg auxiliaries and other plant services such as pumps, cranes, paste plant operation, fans and miscellaneous requirements.

Attached to the turbo-generator building is an electrical bay housing generator switchgear and controls, and electrical distribution center for entire plant.

Rectifier facilities for converting the 13,800-volt alternating current to 700-volt direct current for potline operation will be housed in a building over 1000 feet long.

Big Water Pumping Unit

A pumping plant will deliver 180,000,000,000 gallons of water annually to the steam plant and other facilities from the Mississippi through 66-inch and 90-inch steel pipelines. Similar piping will return water to the river outlet.

Eighty Nordberg radial gas engines supply the direct current for two of the eight potlines. Each engine, developing 1650 horsepower, is directly connected to a General Electric generator having an output of 1290 kilowatts of direct current at 700 volts—making a total of 132,000 horsepower and 103,200 kilowatts output.

Engines in Two Groups

The engines are divided into two groups of 40 each, housed in two steel frame buildings covered with corrugated aluminum. Each building measures 482 feet long, 55 feet wide and 58 feet high. The buildings also house accessory equipment for the engine-generators, but air washers, heat exchangers and exhaust stacks are located outside.

Power control is maintained from a two-story control house located between the two engine buildings and connected

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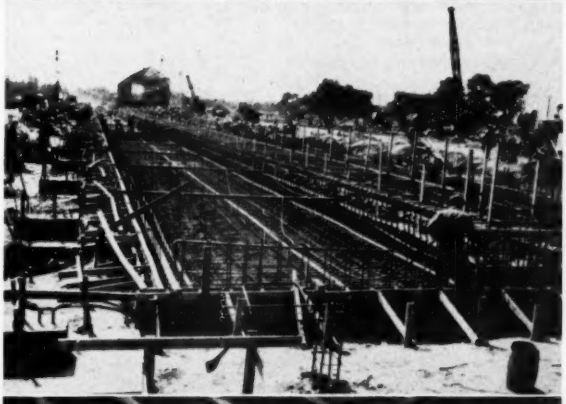
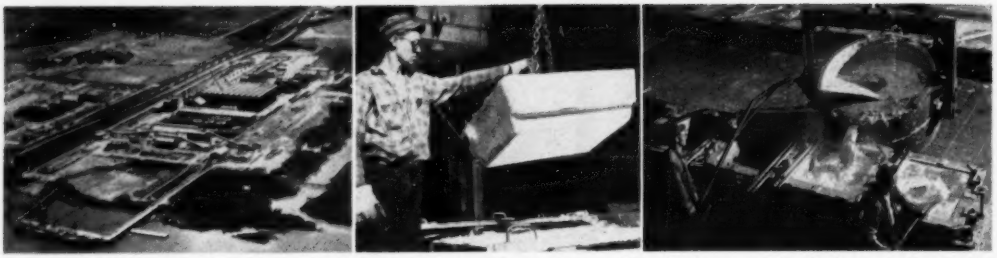


Right—Top—One of the first potroom buildings with part of electrolytic cells, or pots installed. The Chalmette plant will have 16 such buildings, each 960 feet long. The eight potlines will produce 400,000,000 pounds of primary aluminum annually. Second—Excavation and piling for alumina storage bins during construction of the plant. Approximately 375,000 cubic yards of earth are being moved and 35,000 piles driven for foundation bases. One of the major problems was drainage. The water table is only a few inches from the surface. Third—Reinforcing steel for the foundations of a potroom building. More than 50,000 tons of structural and reinforcing steel are required for the project. Bottom—Foundations and initial structural steel erection for two gas engine generating buildings at the new Kaiser plant. The buildings will contain 80 natural gas burning radial engines and 80 generators. Each engine develops 1,650 horsepower and each generator has an output of 1,290 kilowatts, making a total of 132,000 installed horsepower and 103,200 installed kilowatt output.



Above—Left—Alumina, or aluminum oxide is used in making the metallic aluminum at the Chalmette plant. This aerial view shows the Kaiser plant at Baton Rouge, 80 miles up the Mississippi River from the new reduction plant. The bauxite, or aluminum ore, is shipped from the mines to Baton Rouge, where the first step is performed. This operation is being expanded to 800,000 tons of alumina yearly. Middle—A 1,000-pound primary aluminum pig is lifted from the mold. The Chalmette plant will have the capacity to produce nearly 1,100 of these daily. Right—Pouring molten aluminum from a giant crucible into the molds. First pours were made at Chalmette last month, as construction proceeded on the rest of the project scheduled for finish in mid-1953.

Construction Continues at Chalmette Plant as First Pour of Metallic Aluminum Is Made

(Continued from page 35)

with their operating floors by a bridge.

Normally, 37 engines in each building will be in operation, and three will be standby. Alternating current for engine auxiliaries will come from the steam power plant.

Immense quantities of raw materials are used in aluminum production. The Chalmette plant will require each year 378,000 tons of alumina, 88,000 tons of petroleum coke, 34,000 tons of soft pitch, 6,000 tons of cryolite, 5,000 tons of aluminum fluoride, 8,000 tons of anthracite coal, and 50,000,000,000 cubic feet of natural gas, and 180,000,000,000 gallons of water for both process and domestic use.

Large Handling Installations

Large installations are required to handle these materials.

Alumina (aluminum oxide), which is the major and basic raw material required in aluminum reduction, is supplied from Kaiser Aluminum's reduction plant at Baton Rouge by rail.

The rail unloading station handles two hopper-bottom cars at a time. An elevated 24-inch belt conveyor, reaching out nearly 2,000 feet over the pot rooms, operates at 300 feet a minute and carries 150 tons of alumina an hour to the eight alumina bins, or silos, located between the pot lines.

The ore bins are 45 feet in diameter and 77 feet high, with a capacity of 3,500 tons of alumina. Cranes deliver ore from the bins to the hoppers feeding the pots.

Cryolite, used to dissolve alumina and form the electrolytic bath in the pots, is unloaded at the same rail station as alumina and delivered by the same belt conveyor to twelve steel bins, also located between pot room buildings. Each bin is 15 feet in diameter and 77 feet high, and holds 500 tons.

Carbon paste for anodes and cathode lining in the aluminum reduction cells is made by blending and mixing petroleum coke, pitch and anthracite coal into a plastic product which becomes solid carbon when baked.

A building 81 feet by 61 feet by 95 feet high contains the necessary crushing, classifying and mixing equipment.

Petroleum coke is unloaded on to a separate belt conveyor system that carries it to a group of eight storage bins: six circular bins with 800-ton capacity each and two star bins, each containing 350 tons. Another conveyor system transfers coke to the paste plant.

Pitch Stored in Tanks

Pitch is stored in two steel 160,000-gallon tanks. The pitch is heated by steam-jacketed piping to reduce its viscosity during unloading from tank cars and transferred to the paste plant.

Natural gas is delivered by the United Gas Pipe Line Co. through a 16-inch pipe line to a plant station which scrubs and meters the gas and reduces the pressure to plant requirements before distributing it to the power plants.

A pumping plant with total capacity of approximately 342,000 gallons per minute draws water from the Mississippi for condenser circulation, and industrial and domestic use. A complete water treatment plant provides clear, sterile, potable water for drinking and other requirements.

Other buildings and auxiliary facilities include administration, personnel, laboratory, washroom and locker buildings, pot lining, power plant maintenance, electrical maintenance, garage, carpenter shop, machine shop and warehouse buildings, in addition to specialized smaller shops and lunch rooms.

400 Million Pounds Yearly

The new Chalmette plant which will be America's largest aluminum production facility with a 400,000,000-pound-a-year capacity, is being designed and constructed by Kaiser Engineers, one of the nation's major engineering organizations.

The plant is being constructed in two units of four potlines each. The first unit is near completion, and construction has started on the second unit. The work force has totaled an average of 3,500 to date.

In planning and building the new aluminum plant which began production in December, Kaiser engineers successfully solved major problems of widely varied types — from coping with the drainage and foundation problem rising from a water table only a few inches under the ground, to designing two different types of power plants of major size, raw material handling and processing facilities, metal handling equipment as well as the huge reduction potlines themselves.

Key Executive Listed

Directing execution of the entire plant project are George Havas, vice president, general manager and chief engineer of Kaiser Engineers; L. H. Oppenheim, assistant general manager and assistant chief engineer, and E. C. Anderson, manager of the aluminum division of Kaiser Engineers.

The key group of men responsible for various phases of plant design and construction includes: G. B. Scheer, project engineer for the steam power generating plant; W. A. Vogt, project engineer for the gas engine power generating stations; W. W. Pegram, project engineer for aluminum reduction facilities, paste plant, general utilities and all general features of the plant; J. H. Rowan, general purchasing agent; W. Bertwell, chief design engineer; H. O. Tracy, controller; J. E. Hughes, office engineer; and P. J. Stafford, chief estimator.

Backman in Charge

In direct charge of work at Chalmette is F. A. Backman, construction manager. Assisting him are R. C. Wilson, construction superintendent; Duncan Campbell, industrial relations director; K. G. Ozals, assistant industrial relations director; W. H. Neville, B. F. Eller, R. B. Sims and

H. N. Pettigrew, Jr., assistant construction superintendents; W. B. Edwards, field engineer; S. S. Simonson, office engineer; L. R. Manis, purchasing agent; W. K. Martin, project accountant.

Responsible for some of the most ambitious projects in modern industrial construction, the Kaiser Engineers organization is currently completing work valued in excess of $270,000,000. Besides the Chalmette aluminum plant, this amount covers such varied fields as steel mills, airport runways, municipal water supply systems, diatomite processing plant, testing facilities for guided missile, aluminum processing facilities, iron and coal mining, railroads, gypsum wallboard plant, cement plant and material handling facilities.

Kaiser Engineer Staff

Kaiser Engineers maintain a staff of 600 professional engineers and technical experts at its home office at Oakland, Calif. This force is equipped to handle any single phase of engineering or to carry a project through from preliminary studies to completion of construction—including such functions as research, design and layout, estimating, preparation of specifications, construction programming, procurement and expediting of materials and equipment, and the construction itself. Construction personnel and field engineers number in the thousands, varying with the volume and type of work underway.

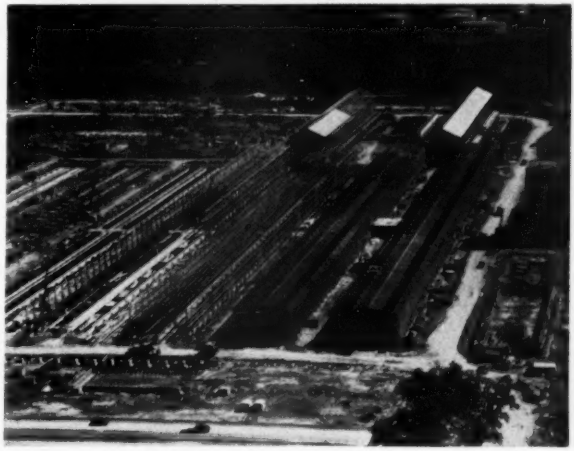
Contracts Above $45,000,000

Contracts totaling more than $45,000,000 have been awarded by Kaiser Engineers to date for equipment and materials in the construction of the new Chalmette aluminum reduction plant at New Orleans for Kaiser Aluminum & Chemical Corporation.

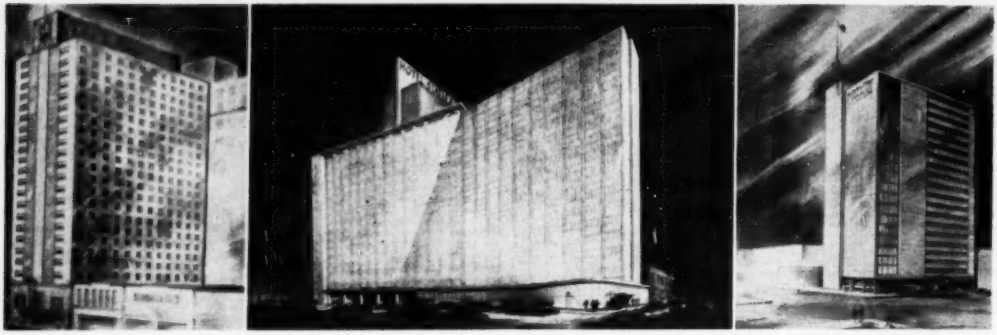
Among the major suppliers are the following firms:

American Forge Manufacturing Co., Pittsburgh, Pa.;
Atlas Contracting Co., Inc., Alexandria, La.;
Atwood & Morrill Co., Salem, Mass;
Bailey Meter Co., Cleveland, Ohio;
Barnett Co., Barberton, Ohio;
Berger Engineering Co., Seattle, Wash.;
Blattmann Sheet Metal Works, New Orleans, La.;
Buffalo Forge Co., Buffalo, New York;
Builders-Pacific Inc., Berkeley, Calif.;
C. F. Bulotti Machinery Co., San Francisco, Calif.;
Buran Equipment Co., Birmingham, Ala.;
Butler Manufacturing Co., Kansas City, Mo.;
Chain Belt Co., Milwaukee, Wisc.;
The Clark-Aiken Co., Lee, Mass.;
Clark Equipment Co., Buchanan, Mich.;
Coast Equipment Co., San Francisco, Calif.;
Consolidated Western Steel Corp., Orange, Texas;
Crane Co., Chicago, Ill.;
Custodis Construction Co., Inc., New York, N. Y.;
Cutler-Hammer Inc., Milwaukee, Wisc.;
Cyclops Iron Works, San Francisco, Calif.;
Delta-Star Electric Co., Chicago, Ill.;
Duff-Norton Manufacturing Co., Pittsburgh, Pa.;
Foster Wheeler Corp., New York, N. Y.;
Gardiner Manufacturing Co., Oakland, Calif.;
General Conveyor Co., San Francisco, Calif.;
General Electric Co., Schenectady, N. Y.;
General Electric Supply Corp., Schenectady, N. Y.;
General Machinery Co., Spokane, Wash.;
Gilmore Steel & Supply Co., Inc., Oakland, Calif.;
Grinnel Company, Inc., Providence, R. I.;
Griscom-Russell Co., Chicago, Ill.;
Holzer Sheet Metal Works, Inc., New Orleans, La.;
Incandescent Supply Co., San Francisco, Calif.;
Industrial Machinery Co., Inc., Fort Worth, Texas;
Ingersoll-Rand Co., New York, N. Y.;
Jahncke Service, Inc., New Orleans, La.;
Jamar-Olmer Construction Co., Houston, Texas;
Johns-Manville Sales Corp., New York, N. Y.;
Joy Manufacturing Co., Pittsburgh, Pa.;
Clifford A. King, New Orleans, La.;
Larkin Electro Products Corp., New York, N. Y.;
Lead Products Co., Houston, Texas;
Laclede Steel Co., New Orleans, La.;
Logan Clay Products Co., Logan, Ohio;
MacDonald Engineering Co., Chicago, Ill.;
Manning, Maxwell & Moore, Inc., Bridgeport, Conn.;
Midwest Piping & Supply Co., Inc., St. Louis, Mo.;
Nordberg Manufacturing Co., Milwaukee, Wisc.;
Northern Engineering Works, Detroit, Mich.;
Olympic Roofing Co., Inc., New Orleans, La.;
James F. O'Neil Co., New Orleans, La.;
Pacific Car & Foundry Co., Renton, Wash.;
Patterson Foundry & Machine Co., East Liverpool, Ohio;
Harold R. Peterson Inc., Los Angeles, Calif.;
Poydras Lumber Co., New Orleans, La.;
Henry Pratt Co., Chicago, Ill.;
Republic Supply Co., Los Angeles, Calif.;
Revere Copper & Brass Inc., New York, N. Y.;
Robinson Clay Products Co., Akron, Ohio;
Jos. T. Ryerson & Son Inc., Chicago, Ill.;
Fred Simonson, New Orleans, La.;
Stephens-Adamson Manufacturnig Co., Aurora, Ill.;
Syntron Co., Homer City, Pa.;
Tay-Holbrook Inc., San Francisco, Calif.;
J. T. Thorpe & Son Inc., Emeryville, Calif.;
The Trane Co., La Crosse, Wisc.;
United Gas Pipeline Co., New Orleans, La.;
Westinghouse Electric Corp., Pittsburgh, Pa.;
Westinghouse Electric Supply Co., New York, N. Y.;
Carl E. Woodward, Inc., New Orleans, La.;
Woodward, Wight & Co., Ltd., New Orleans, La.;
Worthington Pump & Machinery Corp., Harrison, N. J.;
Yale & Towne Manufacturing Co., Stamford, Conn.

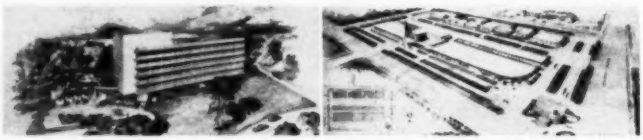
Above—General view of the aluminum reduction area at the new Kaiser plant being pushed to mid-1952 completion by Kaiser Aluminum & Chemical Corp. at New Orleans. Four of the sixteen 960-foot long potroom buildings are shown in various stages of construction in the foreground. Power plant is in the background and carbon paste plant at the right.



Dallas Building Keeps Pace with City's Growth



Above—Left—Nearly completed at Dallas is the 500-room addition to the Hotel Adolphus. Middle—Dallas' Hotel Statler will cost $10,000,000, have 17 stories and 950 rooms. Right—The 20-story Fidelity Union Life building was started last spring and is a $5,000,000 project. Wyatt C. Hedrick is the architect for the Adolphus and Fidelity Union projects. Holabird, Root & Burgee, Chicago, are architects for the Statler building.



Above—Left—Construction is starting on the $2,250,000 Southern Bankers Life building, for which Jon D. Carsey and John B. Danna are the architects. Right—The Caruth shopping center, built at a cost of $500,000, was designed by Grayson Gill.

by

Horace Ainsworth

"Nothing in Dallas is ever built big enough."

This statement by the late G. B. Dealey, former publisher of *The Dallas Morning News*, is easily explained when you consider the fact that during the last eight decades, Dallas County's population has increased 54 per cent or more every decade over the previous decade, except during the 1890-1900 and the 1930-1940 depression periods. And in those decades, there were still population increases of over 20 per cent.

Ever keeping pace with these leaps in population, Dallas' skyline has been a restless, changing, climbing silhouette against the sky. Dallas' building boom is diversified, like the city itself. In 1951, it is still building away on all fronts—residential, industrial, commercial.

In the first nine months of this year, almost 8,000 single family units were completed in Dallas. This is two per cent more than were completed during the same period in record-breaking 1950 and represents 88 per cent of the residential units completed thus far this year. The remaining 12 per cent were apartment units.

Building permits for the first nine months of the year amounted to $80,172,483, and total construction awards for metropolitan Dallas during the same period in 1951 were $182,479,000.

To the eye, most spectacular are the additions to the downtown Dallas skyline.

Steel work has been started on the Republic National Bank's $17,500,000 skyscraper. With its 36 stories above the ground and four below, it will rise as the tallest office building in Texas.

Towering up from a more than $2,000,000 site (45,000 square feet) at Bryan, Pacific and Ervay Streets, it will adjoin the Medical Arts Building.

Construction is beginning on Dallas' new Statler Hotel. A 17-story building, with 950 rooms, it will cost approximately $10,000,000.

Nearing completion is the 500-room addition to the Adolphus Hotel, while a six-story addition to A. Harris and Co. is under construction.

The 17-story, $5,000,000 Corrigan Tower Building, situated at St. Paul and Pacific streets, will be finished early in 1952. The Dallas Power and Light Co. plans a $27,500,000 building project within the next three years.

Industry is dotting the Dallas landscape with new manufacturing plants and warehouses on all sides. And again, diversity is the word. At the same time, home industry is showing outstanding enterprise in building for the future.

A $494,000 addition to the American Iron and Metals, Inc., plant is planned, while the 66,000-square-foot home of Harry Bogue Motors was started last September. Collins Radio Co. plans a 60,000-square-foot office and factory building.

The Ford Motor Company is enlarging its operations in Dallas with a new $1,000,000 parts depot, which got underway in August. Its present assembly plant is also being doubled, at a cost of $4,250,000.

The contract was awarded in September for General Electric Company's $232,000 factory branch warehouse. The Graybar Electric Building was completed in May at a cost of $300,000.

A 16,000-square-foot addition to the plant of the Haggar Company, nationally famous manufacturer of men's slacks, was completed recently. A new J. C. Penny Company store, to contain 21,600 square feet, was started in June. Sears, Roebuck and Co. is finishing its $400,000 addition.

Approval of a $25,000 federal grant to be matched by city funds for land purchases for the northwest-southeast runway extension at Love Field was announced early in November by the Civil Aeronautical Administration. The money will be available to Dallas in the 1952 fiscal year. The $306,000 construction job which is under way on the runway will lengthen the landing strip from 5,200 to 6,200 feet.

Dallas most likely will be called on within 18 months to vote a multi-million dollar bond issue to help take care of a booming school population expected to reach 104,000 by 1957.

Since the end of the war, Dallas has spent about $26,500,000 on schools. This program includes 258 classrooms completed; 377, under construction; 122, on architects' drawing boards, and 65 to be placed in future buildings to round out the program.

Several shopping centers in residential areas of Dallas have recently been completed, including the $500,000 Caruth proj-

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Above—Left—New International Harvester plant at Memphis. Middle—The Memphis harbor project, showing the hydraulic fill of approach and closure dam completed and work under way on the industrial fill. Right—Ford plant at Memphis.

Memphis Constructing at Unprecedented Rate

by
W. C. Rucker

Midway between Chicago and New Orleans on the Mississippi River, Memphis, Tenn., is building homes, churches, schools, commercial and industrial plants, and hospitals at a rate that is almost unprecedented.

Though it has shown consistent growth for the past fifty years, Memphis has caught the eyes of the nation with its great development between 1940 and 1950.

Census figures reveal that the population of Memphis jumped from 292,942 in 1940 to 394,025 in 1950—a percentage gain over 1940 of 34.51 per cent. In like manner, the population of Shelby County rose from 358,250 to 480,173 in 1950. Based on these census figures, Memphis advanced from a rank of 32d in the nation to a standing of 26th in population among all cities of America.

Population Gains

Population gains are natural revelations that Memphis has grown as a business center also. The 1948 Census of Business disclosed that Memphis ranked 16th in the nation in wholesale volume compared to 26th in 1939, but now a 1951 Printers Ink Survey places Memphis 13th in the U. S. and first in the South as a wholesaling center.

For the year 1950, Memphis led the state of Tennessee with 36 new industries and 46 industrial expansions. New plant investment in Memphis represented more than two-thirds of the state total and expansions of existing industry amounted to $23,971,000.

Again in 1951, Dun & Bradstreet has named Memphis as one of 20 fastest growing cities in the nation and predicts that the Bluff City will continue to grow steadily by virtue of balance between production, distribution, and trade; and through location of major new industry.

Residential Building

Residential units constructed in Memphis in the period from January 1, 1941 through August 1, 1951 totaled 44,094. Of this group, 33,952 units were built after January 1, 1946.

Based on an estimate by the Home Builders Association of Memphis of 3.5 persons per dwelling unit, the construction industry of Memphis has provided housing for 154,329 people since 1941, approximately 32 per cent of people in Memphis and Shelby County. In the past five-year period, housing has been provided for 118,832 people.

The Home Builders Association of Memphis estimates that approximately $330,000,000 has been spent for new-home construction since V-J Day and goes on to say that it is a $58,000,000 per year industry for Memphis.

Dwelling units numbering 9,516 were completed there in 1950 at an average cost of about $7,500.

According to home builders, construction for 1951 has been off about 37 per cent in the residential field, when compared to 1950. On September 1, 1951, 5,078 dwelling units had been completed, and 1,100 units were under construction at that time.

Out of the 33,952 residential units built since 1946, approximately 8,000 rental units have been placed in service. In this group, 2,000 units are said to rent for $50 or less per month, and 1,500 units for $42.50 or less per month.

The Memphis construction industry has truly kept pace with the tremendous business growth of its city by providing adequate housing for its many new citizens.

Business Construction

As in the residential field, business has been building too.

The Kimberly-Clark plant in Memphis had two expansions during 1949 and 1950 that totaled more than $4,000,000.

E. I. du Pont de Nemours, after starting a $7,500,000 sodium cyanide plant there, announced plans in 1951 and started production on a hydrogen peroxide plant also.

A new two-story wing to the large Ford Assembly Plant, providing 217,000 square feet, was announced by company officials last summer.

A new $1,000,000 enlargement program for the municipal airport has begun for the U. S. Air Force.

Construction began last fall on the initial ore-reduction plant of Montana Ferroalloys, Inc., valued at $1,000,000, at nearby Woodstock, Tenn.

The year 1951 also brought an announcement from Memphis Works of International Harvester of a $3,000,000 expansion to raise the Memphis investment to $23,000,000.

Now, construction is underway on a new catalytic cracking plant for Delta Refinery Co.; Chicago Metal Hose Corp. has under construction a new 120,000 square-feet plant in Memphis. Dietz Forging Co. has announced plans to build a new plant.

Continuing the trend, Quaker Oats has a $2,000,000 improvement program underway for one of its plants. Borg-Warner Corp. has revealed that it will build a new $3,000,000 plant to adjoin its present manufacturing building.

More Proposed

With 280 acres of industrial sites of the Memphis Harbor Project available, more industries are sure to locate locally to afford themselves low-cost river transportation connecting with one of the finest railway and motor-freight centers in America.

The Navy Air Station and the Air Technical Training Center at nearby Millington, Tenn., have begun a huge $5,444,637 expansion project to enlarge and improve their facilities.

According to building permit records, which are always conservatively estimated, new-church construction in Memphis amounted to $4,181,000 in 1948, 1949, and 1950. In these same three years, permit records reveal that public school construction amounted to $3,747,600.

In 1949, the Methodist Hospital began an expansion program valued at $1,243,680, and in 1950 construction began on

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Below—Artist's conception of new Flexonics Corporation plant at Memphis.

Belton Dam to Continue Under New Appropriation

The $4,000,000 recently appropriated for the Belton Dam and Reservoir project—largest single Congressional appropriation thus far made for this Central Texas project—will make it possible to advance construction to the halfway mark. These funds will enable the Corps of Engineers, builders of the project, to continue a current contract under which the concrete outlet works, now about 85 per cent complete, are being constructed. This $1,869,000 contract was awarded in March of last year.

This appropriation will also make it possible to advertise early next year a new contract for completion of the earth embankment and construction of the concrete spillway.

To Build Embankment

Under this contract, the remaining portion of the 3,800-foot long earth embankment across the Leon River Valley and the concrete spillway will be built. About 2½ years will be required to complete the work, for which subsequent Congressional appropriations will be needed.

Funds from the recent appropriations will also be used for the relocation of Texas State Highways 36 and 317. This work will be accomplished under negotiations with the Texas State Highway Department. Further money is earmarked for land acquisitions and various relocations.

About 15 cemeteries, some of them only small burial plots, are to be moved. There are, in all, some 1,150 graves. As a result of these relocations, three new cemeteries are planned, one to be established south of Belton, a second to be located adjoining the existing Flint Creek Cemetery on the Leon River, and a third new site to be established adjoining Eagle Springs Cemetery.

Belton Started in 1949

Construction of the $17,750,000 Belton project was initiated in July 1949. Thus far Congress has appropriated about $9,000,000 for the work: $150,000 in 1948; $500,000 in 1949; $1,488,200 in 1950; $2,763,500 in 1951 and $4,000,000 for the current fiscal year.

Under the initial contract with Hunter Construction Co. of Ada, Okla., a portion of the earth embankment was constructed. This work was completed early in 1950, and was followed by a contract totaling almost $2,000,000 with Winston Brothers Co., of Minneapolis, Minn., under which the concrete outlet works and service bridge are being constructed.

The outlet works, a vital part of the Belton project, will serve for the discharge of flood waters which will be stored in the lake to be formed behind the dam. It consists of a gated intake structure and a 790-foot long concrete discharge conduit measuring 22 feet in diameter. Approximately 44,000 cubic yards of concrete and 4,000,000 pounds of reinforcing steel are being used in this construction work.

While work on the dam and on relocations is being prosecuted as rapidly as possible, engineering surveys of the reservoir area are also being conducted. In this latter activity, Beavers and Ashford Corp., San Antonio, Texas, is assisting the Corps of Engineers.

The land thus far acquired at the Belton project has been largely limited to the construction requirements of the embankment proper. The bulk of the real estate has yet to be obtained.

Real Estate Acquisition

In determining the real estate needs for the Belton project, a project boundary or taking line is established, based on engineering, operation, management and real estate factors. In general, the real estate property taking line follows a so-called guide contour line, the elevation of which is somewhat above the height of the spillway crest. Determination of this guide contour is established after exhaustive studies of the characteristics of the project, such a spillway discharges, wave action, sedimentation, erosion and other engineering studies have been made. The final taking line, generally speaking, follows this guide contour, giving consideration to economic divisions of established property lines where feasible, severance damage and, above all, to the requirements for the construction, operation, management and public access to the reservoir.

Appraisers Evaluate Property

Once these studies have been completed, experienced appraisers will make a thorough evaluation of the property to be acquired with a view to negotiating with the land owner for the purchase of this land.

In acquiring real estate for the Belton project, every effort will be made to arrive at a mutually satisfactory settlement with the land owners, based upon appraisal of the fair market value of the property.

Sometimes, and often by agreement with the owners, institution of condemnation proceedings may be necessary to clear title or to obtain immediate possession of the land acquired for project purposes. Even after condemnation proceedings have been initiated, negotiations with owners are continued, and based on past experiences in connections with other projects, mutually satisfactory agreements are reached in most cases.

Public Use Planned

After construction of the Belton project has been further advanced, plans will be formulated for the development of public use facilities on the marginal lands of the lake, none of which will be acquired solely for the purpose of recreation.

These plans will give consideration to the needs for roads and parking areas to make the reservoir accessible to the public. Requirements of the public in using the reservoir area for boating, camping, picnicking and other recreational purposes and the leasing of lands for concession developments, and agricultural uses will also be considered.

In the preparation of these preliminary plans and in the ultimate development of the reservoir area, the Corps of Engineers will invite the participation of all interested local, state and federal agencies.

Once a plan has been formulated, it will be presented at a public hearing to be held in the vicinity of the Belton project. (A similar hearing was conducted recently in connection with nearby Whitney Dam). At the public hearing everyone interested in the proposed developments will have an opportunity to express his views frankly, fully and publicly. After the hearing, the plan together with the statements made at the public hearing will be used in the preparation of the recreational master plan.

First Choice to Public Agencies

In connection with any recreational developments on government owned lands, the public interest is the paramount interest. Therefore, in utilizing the shorelines, certain priorities in leasing and licensing of government lands have been established. First priority will go to public agencies which plan to provide facilities for the general public. The second priority is reserved for non-profit organizations, such as religious and educational institutions, Boy Scouts, Girl Scouts and other such groups. The third category comprises private clubs whose use of the land provides for only a limited public service; while in the fourth and last category are private individuals.

On an overall basis, considering the engineering, planning, construction and real estate acquisition program, the Belton project stands now about 20 per cent complete. With the recent appropriations, it is expected that the project may be advanced to near the halfway mark.

Completion by 1954

Provided additional funds are made available by Congress, present estimates call for virtual completion of the project by 1954, when the structure will be ready to fulfill its primary purpose—controlling floods and conserving water.

The Belton project was designed by the Corps of Engineers to control floods, similar to those which occurred in 1900, 1908, 1913 and most recently in 1945. These were the largest on the Leon River in the general vicinity of the Belton dam project. The flood control benefits of the Belton dam will be felt, not only on the Leon River, but on the Little and Brazos Rivers as well.

Benefits to be derived from the Belton project will not be limited to flood control alone. The abatement of sewage pollution and, in the coastal region of the watershed, the abatement of salt water intrusion will be among the benefits resulting from the regulated flows from the

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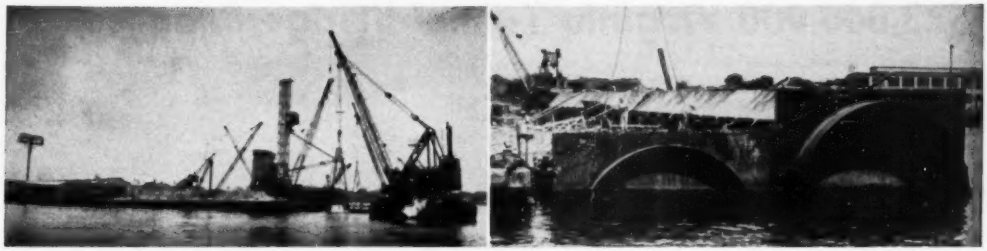

Above—Left—View showing equipment required to sink one of the eight tubular sections for the Elizabeth River tunnel being constructed by Merritt-Chapman & Scott Corp., New York. Two "target masts" between the derrick booms mark the position of an almost submerged section, which is suspended from the slings of the floating rigs. The elevator-like structure to the left is the hoist tower for the concrete mix plant, with sand and gravel barges alongside and a covered cement barge aft. The tower at the far left carries a bank of twenty-four 1,500-watt projector type floodlights atop a floating power plant, this used during night work. Right—The last two sections of the Elizabeth River project while interior concreting was under way at the Merritt-Chapman & Scott "shape-up" pier. The circular sections within the projecting hood plates are the watertight bulkheads which are taken down as interior work on the tunnel progresses after the sections are sunk and joined together.

$23,000,000 Virginia Tunnel-Bridge Progresses

Fast, uninterrupted traffic between Norfolk and Portsmouth has been a dream for the past quarter century, ever since traffic snarls started to make a headache of the overloaded ferry service and roundabout bridge routes between the two fast growing cities astride the mouth of the Elizabeth.

Ferries now provide the only direct link, and during rush hours they must wait in line on the river at the Norfolk side as downtown traffic backs up against the Front Street ferry slip. A narrow bridge spans the East Branch of the Elizabeth to link Norfolk and Berkley, a suburb of Norfolk lying on the point of the estuary where the Elizabeth's two branches join to flow into Hampton Roads.

The first bridge over the South Branch of the river between Berkley and Portsmouth is more than two miles upriver, however. To cross the Elizabeth motorists have their choice of waiting on the ferry or making the long roundabout trip by bridge.

Hopes for a direct vehicular route first started to materialize on March 9, 1942, when the Virginia General Assembly created the Elizabeth River Tunnel Commission, with full powers to build a bridge-tunnel expressway.

Long Study Made

The bridge-tunnel formula was arrived at after long consideration. Construction of a bridge over the East Branch of the Elizabeth, between Norfolk and Berkley, presented no problems. The route across the South Branch lay seaward, however, of the bustling Portsmouth Naval Yard and the idea of a bridge over that vital channel was looked upon with disfavor by military authorities. The cost of an all-tunnel crossing would have been prohibitive, particularly in view of the valuable property which would have to be acquired for the land approach in downtown Norfolk.

The final decision, therefore, was to build a bridge between Norfolk and Berkley, and to link the latter with Portsmouth via a tunnel beneath the Elizabeth's South Branch. Financing of the project was covered by the sale of $23,000,000 of the 3½ per cent tax-free revenue bonds, due to mature in 1980. Sale of the bonds was handled for the Commission by a syndicate of 17 investment houses, and the issue was quickly subscribed.

The total $23,000,000 estimated cost of the project includes not only construction, but land acquisition, engineering and other mandatory expenses. Detailed traffic studies made early in the planning of the project assured that it could pay for itself from tunnel tolls. The bridge will be toll free.

Construction Started in 1950

Actual construction of the bridge-tunnel expressway got started in February, 1950, with award of a joint $16,263,642 contract to Merritt-Chapman & Scott Corp. and the Tidewater Construction Corp. Under that contract, M-C&S is building the tunnel, approximately 3,400 feet long from portal to portal, and Tidewater is building the bridge. Approximately 2,135 feet long from abutment to abutment, the bridge will provide 150 feet of horizontal clearance at the channel and 45 feet of vertical clearance when its double leaf rolling lift bascule is closed.

Parsons, Brinckerhoff, Hall and Macdonald are consulting engineers on the tunnel phase of the project and J. E. Greiner Co., of Baltimore, are consultants for the bridge.

Underwater Section

The most interesting phase of the tunnel's construction centers on the 2,100-foot-long underwater section. Though they entail their own special problems, the work on the approach sections is comparatively routine when matched against those which have to be handled above and beneath the river. For the cut and cover approach on the Portsmouth side, one of the major problems involved the construction of a steel sheet piling bulkhead and series of four anchorage cells to protect the property of the local Coast Guard Station and Seaboard Air Line. As one of the first steps, Merritt-Chapman & Scott underpinned the railroad's double t··ks and built a railroad bridge so that train service could continue without interruption.

Railroad Service Maintained

During construction of the open cut approach on the Berkley side, preliminary work similarly involved erection of a railroad trestle and bridge to permit uninterrupted service by the Norfolk and Southern Railroad.

Perhaps the best way to get the feel of the problems involved in building the river part of a trench-type tunnel is to follow the history of one of its sections of steel casing from the time it is fabricated ashore until, concreted, it is sunk to the river bottom. In the Elizabeth River Tunnel there are seven octagonal-shaped, double-shelled sections, each approximately 300 feet long. Each measures 35 feet, four inches across the width of the outer, octagonal-shaped shell, and 31 feet, four inches, across the diameter of its circular inner ring. The point to remember is that, though bulky and unwieldy, they must be handled with eggshell delicacy throughout the tunnel's construction.

Typical "Section" Story

The typical story of one of these sections started on a shipway at the Sparrows Point, Md., yard of the Bethlehem Steel Company, where approximately 600 tons of steel went into its construction. Upon completion, it was bulkheaded at both ends to make the section watertight. Fitted with a temporary launching bow and ballasted with approximately 1,000 tons of concrete poured into the "keel" beneath its outer and inner shells, the

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$23,000,000 Virginia Tunnel-Bridge Progresses

(Continued from page 41)

tube was then sent down the ways like any other ship. Drawing approximately eight-and-a-half feet of water, it was taken in tow by two tugs for the 180-mile trip down Chesapeake Bay to the Merritt-Chapman & Scott "shape-up" dock at the tunnel site.

Interior Concrete Pumped

Carefully scheduled work to fit the section with an inner ring of concrete approximately 18 inches thick and a 14-inch-thick reinforced stretch of 22-foot wide roadway slab was started immediately upon arrival. The inner ring of concrete was constructed on a webbing of reinforcing steel built around the inner lining of the tube. Eight-inch pumpcrete pipes feeding from a floating mix plant anchored at the river's edge brought the concrete into the tube through elephant trunks lowered through six portholes spaced along the top of the inner shell.

Since the tunnel section was afloat throughout this operation, the main problem along every step of the way was to time the concreting operations so as to keep the tube on an even keel, and avoid any unequal strain on its steel shell.

Special Forms Used

The problem was solved in part through use of a specially designed system of four traveller-moved forms, ingeniously devised so that they could be lowered piecemeal through the small portholes and assembled inside the tube in four 37½-foot-long sections. Easily dismantled for rearrangement, they served as forms for every phase of the interior concreting except for the invert section. A specially designed drag was used to screed the concrete during construction of the invert.

To keep the tube in balance, each successive concreting operation within the tube was started simultaneously at the quarter points of the 300-foot-long section, with two forms teamed on each side to concrete a 75-foot stretch. When this first pour was completed, two forms were moved toward the center and two toward each end, thereby keeping the tube in trim. Following construction of the invert, concreting was carried through in four successive steps:—haunches, roadway slab, sidewalls and arch. During final placement of the arch concrete, a hatchway is left open to permit removal of the dismantled forms. Concreting is then completed by use of hung wooden form and all portholes atop the tube are sealed by welded plates.

Work Carefully Timed

Once all interior concrete is in place, operations are similarly carried through in sequence to concrete the open space between the outer octagonal and inner circular shells until the tunnel section approaches a point of negative buoyancy. Work again must be carefully timed to keep the tube in balance. First step is to build a concrete cap in the open wall running along the top of the tube between the inner and outer shells. Then concrete is sent into the "side pockets" along the length of the section. Each additional ton sends the section deeper into the water. During this operation the "side pocket" openings disappear beneath the surface and from then on the concrete is placed underwater by tremie method. As the section approaches negative buoyancy only the flat bed of concrete capping the inner shell rides above water.

The tube is then ready for sinking in the trench, approximately 50 feet wide and almost as deep, which meanwhile has been dredged across the river bottom. Following a grade of approximately five per cent from shore to channel center, the trench is some 80 feet below water at the deepest point.

Sinking Preparations

Preparatory to sinking, two tall "target masts" are fitted atop the tube at each end. The section is then warped into position above its blueprinted place on the river bottom and Merritt-Chapman & Scott floating derricks take up stations at either end, hooking their slings into place shackles built into the top of the tube. A third derrick moves the hopper through which the additional concrete, pumped out from shore, is placed underwater by tremie method into the still remaining open spaces in the "side pockets" running the length of the section.

If weighed in the dray, the sluggishly afloat tube would at that moment tip the scales at approximately 9,100 tons, including 600 tons of original structural steel and 8,500 tons of built-in concrete. Concreting continues until, after losing buoyancy, the section weighs approximately 100 tons underwater. The two derricks then lower it gently until the tube comes to rest on the gravel bed, screeded to proper grade, which has been prepared for it on the trench bottom. As it goes down, transitmen from stations ashore keep the target masts constantly in their sights to insure perfect alignment and grade.

Tubes Positioned

Half-circle, 18-inch-long hood plates project beyond the end of each section. On one end, they are on the top half of the section; on the other, they are at the bottom. At each end of the half circle, the hood plates are fitted with a slotted flange. As each tube section is positioned next to another on the river bottom, the hood plates form a complete circle, bringing the slotted flanges into alignment. After a river bottom inspection to insure perfect placement, M-C&S divers drive five-inch pins through the slotted flanges, temporarily bolting the sections together.

Once the tube is positioned underwater, additional concrete is poured by tremie method to fill all remaining open spaces between the inner and outer shells, securely ballasting the tube. Solid rings of concrete are placed around the section joints to seal them tightly before the trench is backfilled and later, as the bulkheads are progressively holed through for the interior work, the section joints are welded from the inside.

Final interior work will include placement of a hung ceiling which, faced with porcelainized metal to match the ceramic tile of the walls, will provide a 13½-foot vertical clearance. A ventilation building at Portsmouth end will send fresh air in through the portals. Vitiated air will be drawn off through exhaust ducts above the ceiling and beneath the roadway slab. There will be a patrol and inspection walkway along one side of the two-lane roadway.

"Dam and Dry" Method

On the Berkley side, the juncture between the land approach and underwater sections of the tunnel will be built by a "dam and dry" operation. First, Merritt-Chapman & Scott crews will throw up an earth fill dike which, partially covering the tube sections nearest shore, will make a lake of the river's edge. The entire area will then be pumped out, exposing the bulwarked end of the shoreside tube and permitting "in the dry" construction of the transition joint.

Working conditions on the Portsmouth side required that juncture to be made underwater. Placement of the tubes in the river bottom trench was started on the Berkley side and to date they have been going down in sequence. The seventh tube, nearest Portsmouth, is going down, however, before the sixth, since it will have to be positioned in a wet trench leading to the cut and cover approach. If the sixth tube were already in place, there would be no room to maneuver the seventh into the wet trench.

Telescope Transition Joint

To solve that problem, a bulkheaded telescope-type transition joint has been built in the dry behind a dike on the river end of the cut and cover approach facing the wet trench. After removal of the dike, the shoremost tube is being floated in and locked to the transition joint. The sixth tube is being sunk and hooked to the fifth. With the telescopic transition joint providing the leeway, the shoreside tube will then be pulled back to lock into the sixth.

All the above offers only some of the highlight problems being met and solved by Merritt-Chapman & Scott personnel, in constant teamwork with the engineers of Parsons, Brinckerhoff, Hall and Macdonald. Burton F. Sanders is M-C&S's project manager, working under William Denny, vice president in charge of the company's New York marine and heavy construction division, and Ralph E. DeSimone, executive vice president and general manager, in charge of overall operations. George Murphy is resident engineer for Parsons, Brinckerhoff, Hall and Macdonald.

Housing Designs Sought

Manufacturers of mobile and demountable type houses are invited to submit designs to the Housing and Home Finance Agency for family units suited to serving requirements in non-permanent defense areas. The units should be readily movable from one location to another.

Multi-million dollar plant being built at Hampstead, Md., by Austin Company for Black & Decker Manufacturing Co.

Push Work on Hampstead Black & Decker Factory

Black & Decker Manufacturing Co. now has its multi-million dollar plant at Hampstead, Md., under roof. The building will contain 100,000 square feet and is designed so it can be economically expanded to 1,000,000 square feet on one floor in any of three directions.

Austin Co., of Cleveland, holds the contract for both design and construction.

Elevation of the main floor lies at 860 feet above sea level. This places the building slightly above the Baltimore-Hanover Pike as the latter approaches the site from the south. There is more than ample space available for the parking of employees' cars adjacent to the building even in the 1,000,000 square foot expanded plan.

The building is constructed around a structural steel frame, with 40 by 60 foot column spacing and a 16-foot height from the finished floor to the lowest chord of the truss. Maintained throughout the building, this height, will allow flexibility in the location of highly stacked storage piles of raw materials, goods in process, and finished stock.

Trusses are of welded construction with connections bolted in the field. A red brick curtain wall surmounted by a five-inch precast concrete sill rises four feet above the finished floor. Above the sill, metal sash four feet in height runs continuously around the building broken only by door openings and corners.

Corrugated asbestos siding one and one-half inches thick and backed up with one and one-eighth inches of Cemesto board is mounted above the sash and rises 24 feet above the finished floor. The building floor is of six-inch wire mesh reinforced concrete with a two-inch wood block overlay. It is designed for live loads of 400 pounds per square foot. The roof is of two and five-eighths-inch Kaylo block covered with four-ply roofing felt and slag.

Shipping and receiving of goods by rail and motor freight has been provided for in the design of the new building. The Baltimore and Hanover branch of the Western Maryland Railroad serves the plant site. A single track siding 1,329 feet in length from the point of switch to the metal bumper within the building provides railroad facilities to the plant. The siding has one curve of 440-foot radius and a maximum grade of 1.82 per cent. There is receiving dock space within the present building for two standard box cars. Six truck dock loading pits have been provided and each is equipped with a hydraulic dock levelling device. A five-ton bridge crane handles materials to and from one truck dock and both railroad docks.

The new plant's electrical distribution system is of modern design. Electricity will be purchased at 33,000 volts power from the Consolidated Gas, Electric Light & Power Co. Voltage will be stepped down to an indoor distribution voltage of 13,000 volts at an outdoor 1,500 kilovolt ampere substation.

The 13,000-volt feeder will supply one indoor 750 kilovolt ampere substation at the present time which will further step the voltage down to the 480/277-volt plant utilization voltages. Four 400 ampere busses will distribute current to the working areas with plug-in units on the bus duct supplying current to lighting fixtures, 110-volt single-phase, dry-type transformers, and three-phase power equipment.

Lighting intensity for over two-thirds of the floor area will be at 50-foot candles. Future expansion of the electrical distribution system will result in a selective primary system with two 13,000-volt feeders supplying each 750 kilovolt ampere substation.

Water will be supplied from deep wells and a 125,000-gallon water storage tank of 25,000-gallon capacity for domestic water and 100,000-gallon capacity for primary fire supply. Due to the anticipated limited yield of the deep wells a 222,000-gallon secondary fire storage tank was constructed. A 250-gallons-per-minute pump will take suction from this secondary tank and pump water into the 100,000-gallon primary tank.

Sewage disposal is a special problem at Hampstead. The present facilities consisting of a comminutor-bar screen unit, Imhoff tank, sludge drying beds, dosing tank, intermittent sand filter, and chlorine contact tank are designed for a maximum flow of 40 gallons of sewage per minute.

The building will be heated by a packaged unit oil-fired steam boiler supplying steam at 50 pounds per square inch pressure. Mechanical ventilation will supply fresh air at the rate of 13,000 cubic feet per hour per person with outside at 72°F.

Ten Louisiana Road Projects Bid at $367,383

The last Louisiana highway bid opening covered ten projects and involved low bids totaling $367,383. Included were those in the following parishes:

Ouachita and Richland—26-10-06 and F-165 (3), Bayou LaFourche Bridge on Alto-Monroe Highway, State Route 15, .212 of a mile of four 30-ft. and six 60-ft. I-beam span bridge and Portland cement concrete pavement approaches; Forcum-James Co., Baton Rouge, La., $228,313;

St. Landry — 144-01-04, CTR. 2, Krotz Springs-Melville Highway, State Route No. 216, approximately 46,600 linear feet of three-inch natural gas pipe line and 590 linear feet of one-inch natural gas pipe line to be removed and relocated; Jimmie Marsalis, Shreveport, La., $11,738;

Allen—703-09-04, certain public roads in Allen Parish, 3.8 miles of washed gravel spot-dumped and reinforced concrete culvert pipe furnished stockpiled at sites; Dunham-Price, Inc., Lake Charles, La., $659 for items 4-9-5 and 4-9-6; Paul A. Lambert, Simmesport, La., Item S-1, $6,211;

Lincoln — 703-09-25, furnishing washed gravel spot-dumped on certain public roads; Item 1, Twin City Gravel Co., Inc., Monroe, La., $16,878; Item 2, Monroe Sand & Gravel Co., Inc., Monroe, La., $31,218;

East Feliciana — 13788a, furnishing washed gravel spot-dumped on various public roads; Jahncke Service, Inc., New Orleans, La., $5,750;

Iberville—13782a, furnishing clamshell spot-dumped on the Bayou Sorrell-Indigo Highway, State Route No. 1003; Stevens & Co., Inc., New Orleans, La., $32,000;

Ascension—13783a, furnishing washed gravel spot-dumped on various state routes; Holloway Gravel Co., Inc., Amite, La., $12,567;

Livingston—13797a, furnishing washed gravel spot-dumped on the Springfield-Killian Highway, State Route No. 160, Rogers Brothers Sand & Gravel Co., Tickfaw, La., $6,161;

East Feliciana — 13786a, furnishing washed gravel spot-dumped on various state routes, Jahncke Service, Inc., New Orleans, La., $14,500;

West Feliciana — 13785a, furnishing washed gravel spot-dumped on certain public roads, Paul A. Lambert, Simmesport, La., $1,386.

Equipment . . . Manufacturers News

LeTourneau Takes Off on Second Trip to Liberia

Making his second trip to Liberia, West Africa, R. G. LeTourneau, internationally known Christian layman and manufacturer of heavy construction equipment, took off from La Guardia Airport, New York, at 2:30 a. m. (EST) Monday Dec. 31, 1951.

Accompanying him was a team of LeTourneau technicians.

The trip on which the party embarked has a two-fold purpose, a company spokesman said.

At the personal invitation of William V. S. Tubman, president of the Republic of Liberia, LeTourneau's party will attend the inauguration ceremonies held at Monrovia.

Another major purpose will be to inspect the country of Liberia and to consult with Liberian engineers on the development of its roads, lumber, mining and natural resources. Mr. LeTourneau has consulted with U. S. State Department officials on the development of less progressive countries along the lines encouraged by the Point 4 program, and will examine Liberia in the light of this program.

The scheduled itinerary was Gander, Newfoundland; The Azores; Dakar; and Monrovia, Liberia.

Rundquist Named Manager Advertising, Public Relations

Poor & Co., Chicago, has appointed W. A. Rundquist of Minneapolis to the position of director of advertising and public relations, according to announcement by President Eugene C. Bauer. Mr. Rundquist will maintain his residence in Minneapolis, where he is also sales promotion manager for Pioneer Engineering Works, a Poor & Co. subsidiary.

Mr. Rundquist was graduated from North Dakota State College in 1929 with a degree in mechanical engineering, and held positions with Bell Telephone Laboratories, New York, and Minneapolis-Honeywell, Minneapolis, prior to World War II. During the war, he served as an officer with the Army Engineers, and since October 1945 has been in charge of advertising and sales promotion activities for Pioneer Engineering Works.

Detroit Engine Executive Cities Diesel Power Rise

Development of smaller, lighter weight diesel engines in the last decade is largely responsible for today's nation-wide trend toward the increased use of diesel power in many types of military and commercial applications.

This is reflected in announcement by V. C. Genn, general sales manager of the Detroit Diesel Engine division of General Motors, that the Detroit division would produce more Diesel engines in 1951 than in any previous post-war year.

Mr. Genn said that since the Division introduced its smaller two-cycle Diesel engine in 1938 it had produced over 50,000,000 Diesel horsepower. This is more than three times the horsepower produced by the entire diesel engine industry in the forty year period previous to 1938.

Citing greater portability as one important factor in the present widespread acceptance of diesel power, Mr. Genn stated the sale of diesel-powered trucks had increased ten fold in the last ten years.

Similar gains have been registered in many other lines where portability is a factor. These Mr. Genn listed as construction, earthmoving, oil well drilling, lumbering and commerical fishing.

Pulverator Mill Bulletin Issued by Allis-Chalmers

How the "multi-impact" principle of the Pulverator hammer mill works to thoroughly pulverize limestone, oyster shells, and other non-abrasive materials is told in a new bulletin released by Allis-Chalmers Manufacturing Co., Milwaukee, Wisc.

Photos in the bulletin show the Pulverator with cover removed, the rotor assembly, reversible grates, hammers and arms, bearings, and the drive. Other photos show a comparison of Pulverator, rod mill and double roll products.

Pulverator capacities and dimensions are included in the bulletin along with approximate screen analyses of Pulverator products of medium hard limestone.

Materials that have been handled successfully in the Pulverator include asphalt rock, clay and fire brick, coal, lime, salt, shale, mica, clam shells, oyster shells, slag, slate, sylvenite, heavy chemicals, resin, coconut shells, talc, limestone, bauxite, and langbenite.

Copies of "Pulverator 'Multi-Impact' Hammer Mill," 07B6265A, are available upon request from Allis-Chalmers Manufacturing Co., 1083 S. 70th St., Milwaukee, Wisc.

Executives Elevated by Universal Atlas

Election of five executives to higher office by directors of Universal Atlas Cement Co. was announced last month by Blaine S. Smith, president of this U. S. Steel subsidiary.

Vice president and general sales manager, George H. Reiter, was elected to the newly created office of executive vice president; vice president and assistant general sales manager, Fred T. Wiggins, to vice president and general sales manager; assistant to president and secretary, Charles B. Baker, to vice president and general attorney; assistant secretary, Donald C. Leo, to secretary; and attorney, Edward D. Depew, to assistant secretary; all with offices in New York City.

Harvester Hikes Prices on Four Light Chassis

International Harvester Co. has announced increases in the list prices of some of its light models of motor truck chassis, effective December 10. The revisions were made under the applicable OPS price regulations.

The motor truck price increases apply to the company's L-110, L-120, L-130, and L-150 model series and range from 1.3 per cent on one model of the 150 series to 3 per cent on the L-130 series. Dollar increases amount to $30 on the L-110, $20 on the L-120, $40 on the L-130, and $20 on the L-150 models.

Prices remain unchanged on the LB-140, L-160, and the LC-160 models, which are also included in the company's series of "light" motor truck models produced at its Springfield, Ohio, works.

The company stated that increases in the cost of materials and labor had made the upward price adjustments necessary.

District Sales Manager Appointed by Huber

Huber Manufacturing Co. has announced appointment of Don McPherson as Huber district sales manager in the northeastern district, embracing the New England States, Maryland, New Jersey, New York, Pennsylvania and Virginia.

Mr. McPherson has been associated with the company since 1942. He began in the inspection department, handling final inspection and testing, and later transferred to the service department. Before his most recent assignment, he was assistant district sales manager in the Southern states.

He will maintain offices at Huber's home office in Marion, Ohio, at the present time.

Huber manufactures a complete line of road maintenance equipment, including tandem and three-wheel rollers, a 42½-horsepower maintainer, and a heavy duty grader.

Dr. Marshall Directs Link-Belt Research

Appointment of Dr. Lauriston C. Marshall as director of Link-Belt Company's new physical testing and research laboratory at Indianapolis has been announced.

Dr. Marshall will be responsible for an extensive program of original research, as well as for continuing investigation into ways and means of improving production methods and the quality of conveyor and power transmission products developed by Link-Belt's 16 manufacturing plants in the United States, Canada and South Africa.

Dr. Marshall has been professor of electrical engineering at the University of California. He is currently head of the Microwave laboratory operated at Berkeley under the joint sponsorship of the Air Forces and the Research Corporation.

He also is an active member of the University's radiation laboratory staff which has been carrying on nuclear research for the Atomic Energy Commission. He will take over his new duties with Link-Belt Co. as rapidly as he can be released from his present projects.

Universal Makes DeCanio General Sales Manager

J. Von Drasek, vice-president of Universal Forum Clamp Co., Chicago, Ill., has announced the promotion of D. M. DeCanio to general sales manager. Mr. DeCanio will also retain his present position as chief engineer.

G. M. C. Announces Small Light Diesel Truck

A significant new era of economy and efficiency for truckers in the medium-weight field is being opened by G.M.C. truck and coach division which announces its exclusive three-cylinder diesel truck, smallest and lightest diesel ever to be commercialized for use on American highways.

The new G.M.C. D450-37 is a two and one-half-ton unit, with five available wheelbases for either truck or highway tractor models.

Announcement of the radically new diesel truck was made by Roger M. Kyes, vice president of General Motors and general manager of the G.M.C. truck and coach division, who said the compact, 130-horsepower model would create new horizons for cost-conscious truckers operating in the 19,500-pound, G.V.W.-35,000-pound, G.C.W. class.

"The GM 2-cycle diesel economy is being offered for the first time in trucks of the medium-weight hauling class," Mr. Kyes said. "The GMC D450-37 enters a market where there is no other diesel competition."

Previously used only by highway haulers and in heavy-duty off-the-road operations, the G.M.C. diesel family has in its newest member the adaptability for many other different applications.

As a tractor, it meets a long-standing demand of operators for improved operating economy, durability, and extended service life of equipment. It is ready not only for regular inter-city work but also intra-city hauls of relatively high mileages.

As a truck, it is of special interest to local and long distance wholesalers and movers who use vans; to construction companies hauling cement, bricks and other building materials; to loggers and lumber companies; to petroleum companies hauling fuel; to machinery and metal truckers, and to dump-truck operators with cargoes of sand, gravel, coal, etc.

Even farmers who run up considerable mileage, hauling produce every day to market will find the new G.M.C. diesel welterweight the most economical and efficient truck for the job.

Williams Made Assistant Executive Vice President

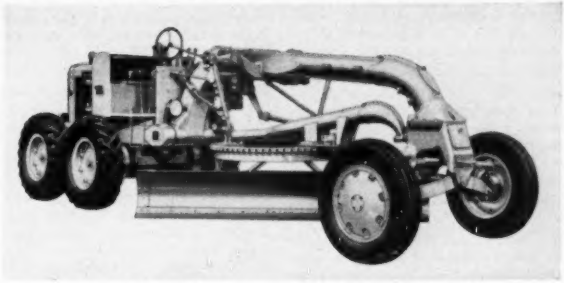
C. H. Williams has been appointed assistant executive vice president—engineering and raw materials, United States Steel Co., it has been announced by M. W. Reed, executive vice president. Mr. Williams has been chief engineer—manufacturing division, United States Steel Co.

After graduating from the University of Colorado, Mr. Williams joined U. S. Steel in 1927 as a junior engineer in the power department of National Tube Co. in Pittsburgh. He was transferred to Carnegie-Illinois Ohio Works in Youngstown in 1930, and then ten years later returned to Pittsburgh as power and fuel engineer.

In 1941 he was in charge of the special engineering staff which coordinated the Defense Plant Corporation's construction in the Pittsburgh district plants of Carnegie-Illinois. He became chief engineer of the company's Pittsburgh district in 1943 and was made chief engineer of Carnegie-Illinois Steel Corp. five years later.

Mr. Williams is a member of the American Iron and Steel Institute; Association of Iron and Steel Engineers, of which he was president in 1949.

Allis-Chalmers Announces AD-40, AD-30 Motor Graders



New Model AD-40 Grader Announced by Allis-Chalmers Manufacturing Co., Milwaukee.

Two completely new motor graders—models AD-40 and AD-30—were announced recently by the Tractor Division of Allis-Chalmers Manufacturing Co., Milwaukee, Wis. These newly designed machines complete a line of five motor graders having a wide range of horsepower, weight and speed. They are embodied with design and construction features which offer new standards of performance, unmatched operating ease and complete service simplicity.

The 4-cylinder, 2-cycle, diesel powered AD-40 weighs 23,000 pounds and develops 104 brake horsepower. The AD-30 is powered by a 3 cylinder 2-cycle diesel engine, weighs 22,700 pounds and develops 78 brake horsepower.

Most modern in motor graders, the Allis-Chalmers model AD's are big and rugged. They will easily and quickly handle the toughest grading or maintenance jobs. Engineered for high production on any operation, the model AD's include many features. The General Motors 2-cycle diesel engine can easily handle the heavy-duty power requirements of any job. Tandem drive offers full traction under any ground conditions.

High axle clearances, the famous Roll-Away moldboard and accurate blade control all combine to move bigger loads faster, produce precision cuts or smooth finishes on a wide variety of applications, construction or maintenance.

New standards of operating ease, incorporated into the Allis-Chalmers AD motor graders, include easier shifting, complete visibility, feather-touch hydraulically-operated steering and all around operator comfort.

Completely enclosed in the main frame, a trouble-free hydraulic booster system provides effortless steering even in the toughest kinds of work.

A large, roomy platform, accessible controls and a needle bearing mounted adjustable seat all contribute to maximum comfort for the operator regardless of his size or stature.

New lift cases, low control box, a higher tapered platform and single tubular frame combine to offer complete operator visibility while sitting or standing.

Accessiblity to major assemblies, for service or repair, is an important feature in the new AD motor graders. A simple forward tilt of the combined fuel tank and seat gives immediate and complete access to the transmission, clutch and drive shaft. Both the clutch and transmission can be removed independently from the AD-40 and AD-30 without disturbing the engine or floor plates.

Mounted on the outside of dash, the hydraulic pump and power take-off are out in the open for easy inspection, maintenance or repair.

Accessories and special equipment are available for the AD motor graders to increase their adaptability to meet a wider variety of specialized applications and conditions.

Additional information on the new AD-40 and AD-30 motor graders can be obtained by contacting your nearest Allis-Chalmers industrial dealer or Allis-Chalmers Manufacturing Co., Milkaukee, Wis.

Permutit Appoints Poore Assistant Sales Manager

The Permutit Co. has announced the appointment of Clyde R. Poore, effective January 1, 1952, as assistant sales engineer for its sales office located at 831 E. Morehead St., Charlotte 3, N. C.

In his new capacity, Mr. Poore will work with Norman D. Doane, sales engineer, in the sales and service of industrial water conditioning equipment manufactured by Permutit.

With three years' experience in the application of industrial water conditioning apparatus, Mr. Poore is well qualified for his new duties.

Born in Middleboro, Ky., he received his bachelor's degree in chemistry from Guilford College, North Carolina.

New A-C Bulletin Includes Proposed AIEE Guide

The proposed A.I.E.E. guide for the use of openly ventilated dry-type transformers with Class B insulation is contained in a new eight-page bulletin released by Allis-Chalmers Manufacturing Co., 1083 S. 70th St., Milwaukee, Wisc.

The guide gives general recommendations on installation, inspection, storage, maintenance, and operation. It includes distribution and power dry-type transformers in ratings above 50 kva and above 600 volts, cooled by natural draft or forced draft.

Copies of the bulletin, 61X7088B, which should be particularly helpful to maintenance engineers and servicemen, are available upon request from the company.

Missouri Road Upkeep Set at $14,000,000

Maintenance on Missouri's 19,047 miles of highways this year is expected to involve expenditure of $14,000,000, a figure approximately the same as that allocated for the purpose in 1951.

Routine maintenance and gravel replacement work, including supervision, will require the major portion of this money. Those activities are expected to cost $12,363,952 during 1952, or $370,893 more than was set aside for such work in 1951.

Snow removal and ice control is foreseen as the next highest cost item, with $650,000 allotted. This is a $50,000 increase over the amount set aside for such purposes last year.

Bridge maintenance needs for 1952 are fixed at $100,000 more than for last year, with $450,000 budgeted for such work in 1952. On last year's budget those needs had been anticipated at $350,000.

Other apportionments in the maintenance budget include: $261,048 for emergencies; $100,000 for necessary signs and markers and a like amount for maintenance administration; and $75,000 for equiment adminstration.

To prepare this maintenance budget, engineers in the Commission's bureau of maintenance headed by Dean Wilson, made detailed studies of cost records for the 22-year period from 1929 to 1950, inclusive. Special attention necessarily was given to the 1950 records, since costs during that year exceeded the average for the entire study period.

To arrive at the final estimate of needs, it was determined that routine maintenance costs will range from $175 per mile on graded earth roadways in the supplementary system to $2,000 on the many sections of "distressed" pavement in the state. This "distressed" pavement represents sections of highways on which heavy repairs are imperative during the year if they are to be kept usable.

The routine maintenance costs, which are exclusive of gravel replacement work, on the various highway types are estimated, per mile, at:

Major system: $900 on heavy and $500 on medium traffic concrete routes; $625 on hot mix type asphaltic surfaces; $900 in North and $700 in South Missouri on bituminous mat routes; and $350 on gravel roads.

Supplementary system: $400 a mile each on concrete and asphaltic type surfaces, $700 a mile on bituminous surfaces and $300 per mile for gravel.

Building Material Prices Stable in December

Prices of building materials in the Atlanta Metropolitan Area during December remained stable for the fourth consecutive month following the downward trend in the mid-year period, according to Brunswick A. Bagdon, Regional Director of the U. S. Department of Labor's Bureau of Labor Statistics in the South.

Of the 44 commodities included in the December survey, prices of 84 per cent remained unchanged; while 14 per cent showed a slight increase during the month; and linseed oil was the only item showing a decline of one per cent.

Four of the eight items in the paint and paint supplies group, enamel, varnish, inside and outside paint, advanced approximately two per cent. Southern pine dimension boards rose one per cent—the only commodity to show any change in the lumber and lumber products group. Galvanized steel pipe in the plumbing and heating materials group also increased one per cent. The remaining 37 materials reported no change in price during the period.

As compared with a year ago, most items showed higher prices ranging from fractional increases for vitreous china closets to 16 per cent for raw linseed oil. In contrast, individual commodities in the lumber and lumber products group have declined from two to 14 per cent, with the exception of Southern pine drop siding which has increased three per cent.

This is a continuation of a series of monthly reports of average prices of building materials published by the Southern Regional Office of the U. S. Bureau of Labor Statistics. The purpose of the series is to provide for general information the trend of average prices charged by dealers to contractors for a list of materials important in homebuilding. Price quotations, effective the 15th of each month, are obtained from representative dealers who are active in the distribution of materials for homebuilding use. The quotations are on the basis of sales to builders or contractors, and also include delivery, whenever necessary, to the job site or contractor's shop.

Prices are averages of quotations received, and may not agree exactly with any individual quotations. They indicate the prevailing prices of most homebuilding materials, but are neither the only prices nor the lowest prices at which valid transactions are taking place. They are usually lower than over-the-counter prices to householders and others purchasing small quantities to be used in repairs, maintenance, and similar jobs.

Atlanta prices are averages of quotations from firms having their places of business in Fulton County, and are not necessarily the same as those in some of the outlying cities in the Atlanta Metropolitan Area.

Kentucky Roads Receive $8,517,600 from Tourists

Kentucky's tourist industry is a billion dollar business.

The 1951 income brought the five-year total to $1,204,413,897, according to a report filed today by the Division of Public Information, the highway department agency charged with tourist promotion. The 1951 tourist "take" amounted to $336,420,864, a 14.7 per cent increase over the $293,201,607 tourist income for 1950.

The state road fund gained $8,517,600 in 1951 from gasoline taxes paid by Kentucky's visitors who traveled Kentucky highways, enjoying the scenic and historic splendors depicted in the department's national advertising. The total gasoline tax return from tourists during the five-year tourist promotion program amounted to $28,726,063, the report indicated.

Ferries, toll bridges and route associations show increases of 16% to 25% during the 1951 tourist season. State and national parks have reported substantial increases. Motor courts and hotels have been expanded in both numbers and facilities throughout the state.

The highway department division which has handled this program in the past will be consolidated with another department of state government on January 1, 1952. Since establishment of the division $124,000, has been expended for national advertising extolling Kentucky's attractions for tourists.

Three million highway maps have been prepared and distributed during the period. The color booklets issued under the title "Historic Kentucky Highways" have gone through seven editions totaling more than 1,400,000 copies.

The division has answered 185,415 individual requests for information on Kentucky, sixty thousand of which were handled this year. It has prepared and distributed 198,895 monthly road condition maps. A total of 752 special stories have been prepared for publication in out-of-state newspapers and magazines, illustrated with scenic photographs of every section of Kentucky.

The "box score" showing the increase in tourist income since 1947 follows:

1947—$161,774,152
1948—$184,160,400
1949—$228,856,874
1950—$293,201,607
1951—$336,420,040

The annual income from tourist trade is calculated through the application of a formula based on gasoline consumption, origin and destination traffic counts and average individual tourist expenditures as determined by local and national surveys. The Kentucky formula has had national notice and has been adopted by several other states. Its results have been substantiated by information obtained from state and national parks, toll bridges, hotels and motor courts, and concessions at various tourist objectives throughout the state.

Armco Names Arrick

H. M. Arrick has been appointed district sales manager in St. Louis for Armco Steel Corporation, according to Logan T. Johnston, general manager of sales.

He succeeds N. L. Pierson who is retiring. He has served as district sales manager there for a subsidiary company of Armco from 1937 until 1945. At that time, the subsidiary organization became a part of the parent company and Arrick became assistant district sales manager.

Mr. Arrick is a graduate of the University of Illinois. His first association with Armco came in 1927 as a sales engineer in Middletown, Ohio.

The finest masonry work starts with

Cumberland Masonry Cement

Cumberland Masonry Cement has been a long-time favorite with architects, contractors and masons all over the South. Its pleasingly light color can always be depended upon to blend with or effectively highlight the beauty of masonry units.

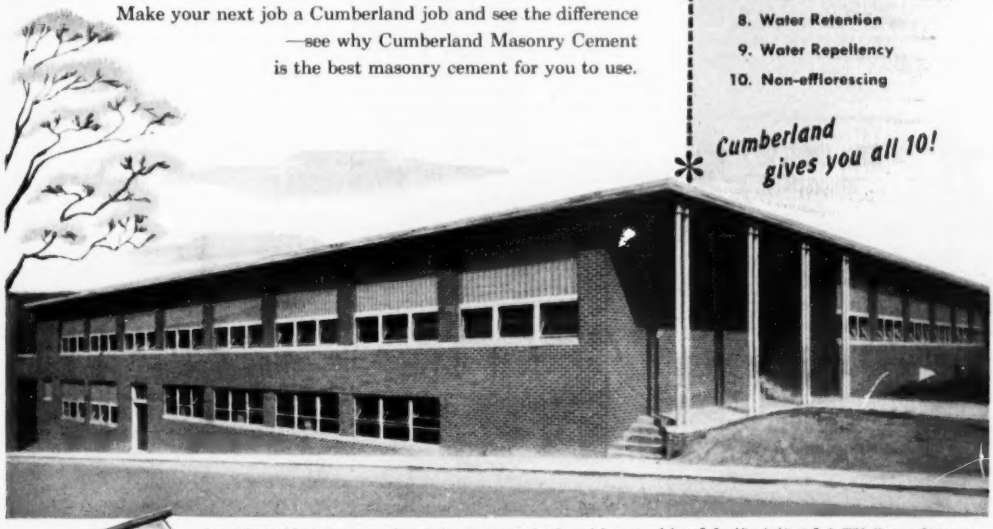
Pictured here is the Second District School in Chattanooga, Tennessee. A beautiful building, its attractive exterior clearly demonstrates why color was an important point to consider. Masonry contractor T. A. Wild wanted the masonry work to have, and to keep, a beautiful light color. That's why he chose Cumberland Masonry Cement. *Beauty*, as well as *quality*, are prime characteristics of any masonry work done with Cumberland Masonry Cement.

Make your next job a Cumberland job and see the difference —see why Cumberland Masonry Cement is the best masonry cement for you to use.

THE 10 BASIC REQUIREMENTS OF HIGH-QUALITY MASONRY CEMENT*

1. Plasticity
2. Body
3. Strength
4. Yield
5. Color
6. Adhesion & Bond
7. Negligible Shrinkage
8. Water Retention
9. Water Repellency
10. Non-efflorescing

* *Cumberland gives you all 10!*



Second District School, Chattanooga, Tenn. Varhey Construction Co., General Contractor; Selmon T. Franklin, Architect; T. A. Wild, Masonry Contractor

Cumberland

PORTLAND CEMENT COMPANY

Chattanooga Bank Building • • Chattanooga 2, Tennessee

Portland — High Early Strength — Air Entraining — Masonry

Any quantity of Cumberland Masonry Cement will be shipped in mixed carloads with other types of Cumberland Cement.

Plantation Finishes $52,000,000 Baton Rouge-Charlotte Line

Above—Plantation Pipe Line Company's Bremen, Ga. pumping station, delivery terminal and tank farm, where ceremonies were held last month marking completion of a $52,000,000 new line from Baton Rouge, Louisiana to Charlotte, North Carolina.

(Continued from page 19)

at Charlotte; the older route, at Greensboro.

Completion of the new pumping facilities along the new main line at 120-mile intervals is scheduled early in 1952. The program also includes re-spacing of pumps along the system to 60-mile intervals. This part of the work is expected to be finished by the middle of this year.

Future addition of pumping stations at 30-mile distances, Mr. Younts revealed, would boost Plantation's delivery capacity another 50 per cent. This would mean the company could deliver petroleum products at the rate of 15,000,000 gallons daily.

Plantation Pipe Line Co. was organized in July of 1940. Its original 1,261-mile system was constructed the following year. Operations were begun in January of 1942, when the capacity was 2,814,000 gallons daily. To meet wartime needs, the company installed fourteen booster pump stations which raised capacity to the 4,000,000-gallon figure.

Georgia Investment Raised

Completion of the new project added an investment in Georgia alone of approximately $10,000,000. Governor Talmadge in his address declared that his administration encourages to the fullest extent the investment of capital, for development of the vast natural resources of his state.

"Free enterprise," he said, "is the great bulwark which protects us against the encroachments of communism and socialism." Neither these, fascism or "any other government-planned 'ism,'" he said, have "given people as much as free, liberty-loving Americans have earned for themselves."

Mr. Younts said the occasion marked not only completion of the new pipeline but also the company's tenth year of operation. "In a relatively short time and under difficult conditions," he asserted, "we are completing a project which will assure the public, industry and agriculture of uninterrupted transportation of vital petroleum products over the critical days ahead."

Organization Outlined

Stressing the Plantation system as symbolic of the "belief in the destiny of the United States and the South," Mr. Younts outlined how the company was organized by him ten years ago as a common carrier owned by the Standard Oil companies of Kentucky and New Jersey.

The original line constructed in 1941 had a capacity of 60,000 barrels daily. First products were pumped into the line on New Year's Day, 1942, less than five months after the start of construction. Construction of the newly finished line was begun last fall. The speed in building the older 812-mile stretch was believed to be a record.

Interesting Incident Cited

Mr. Younts cited an interesting incident during the financing of the original enterprise. The "stockholders decided they would put up half of the cash needed, which was ten million dollars, and told me to go out and borrow the other ten million.

"Mr. Kane and I were in Atlanta and received a wire that the certain insurance companies were ready to loan us the money and to close the transaction, so we rushed to New York where we had scheduled a closing hour of two o'clock. After we received the ten million dollars in a check, we got into a taxi to go back to our offices.

"Sy Kane turned around to me and said 'do you have enough money to pay the taxi fare?' I told him I did not as I had paid for the lunch. There we were—with ten million dollars in our possession and not enough money to pay taxi fare."

Contractors Named

Contractors for the new line were Williams Brothers, of Tulsa, Okla. Builders of a considerable portion of the original Plantation line, the company has done extensive work in South America, the Middle East, Canada, in addition to projects in this country. The award was made on a per-foot-of-pipe laid basis and was estimated at the time to involve $7,000,000.

Plantation had also contracted with Latex Construction Co. of Georgia, with offices in Atlanta, for construction of stations and terminals required under the company's $52,000,000 expansion program.

$45,000,000 Work Proposed at Oklahoma Depots

Almost $45,000,000 worth of naval construction is to be done in Oklahoma under supervision of the district public works office of the Eighth Naval District with headquarters in New Orleans, according to an announcement by F. W. Alcock, director of the construction division there.

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AND CUTTING EDGES
of Superior Quality by
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For all makes and types of road building and road maintaining machines. Also —
BULLDOZER BLADES
BUCKET LIPS
PATENTED SCARIFIER and ICE and SNOW REMOVAL BLADES
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All widths, lengths, and thicknesses; accurately punched to fit your make of machine.
Write for bulletins and other information.
Shunk
MANUFACTURING COMPANY
Established 1854
BUCYRUS, OHIO.

South's Contracts at Record Peak

(Continued from page 21)

back many civilian projects during the last half of the year, projecting some into 1952 and possibly farther into the future. Structural steel appeared to be the principal limiting factor for construction in 1951.

While private new construction paralleled the record 1950 level of almost $21,000,000,000, declines in several categories were bolstered only by an unprecedented increase in industrial expansion.

Publicly financed new construction, on the other hand, paced by military, naval and atomic energy projects, surged ahead of 1950 by $2,000,000,000 to more than $9,000,000,000—a total surpassed only in the peak war year of 1942.

Sharp difficulties for construction other than that supporting defense is expected to be felt during the first half of 1952. As a result, public construction is seen expanding another fifteen per cent, while privately-financed construction declines.

Another peak year of fabricated structural steel production is anticipated by that industry in 1952. This should ease the supply of this presently critical material in the latter half of the year to the extent that an upswing in building construction will be limited principally by the shortage of copper.

The outlook by types of construction is forecast as follows:

Military, naval and atomic energy construction—expected to double to more than $4,000,000,000;

Private industrial—now in full swing under the impetus of the defense program, should continue slightly upwards from its 1951 total of $2,000,000,000 to another all-time peak;

Public utilities—expected by mobilization officials to drop slightly from the $4,600,000,000 in 1951, with increases, maybe, in electric light and power construction, but pipelines remaining almost level at slightly over $1,000,000,000;

Decreases are forecast by mobilization officials of more than fifty per cent from the 1951 levels of $1,300,000,000 for commercial construction and $430,000,000 for religious construction.

Declines are also predicted—of from fifteen to twenty per cent—from the 1951 countrywide totals of almost $1,000,000,000 for hospitals, $11,400,000,000 for housing, $1,800,000,000 for schools, $2,200,000,000 for highways, $865,000,000 for reclamation and flood control and $1,300,000,000 for farm construction.

Building construction of various types, as well as highway bridges and structures, after experiencing difficulties in the first six months, could recover with the anticipated easing of structural steel situation in the latter part of the year.

On the steel situation, the American Iron and Steel Institute, reports that about 105,000,000 tons were produced in 1951, the first year in which the industry

(Continued on page 50)

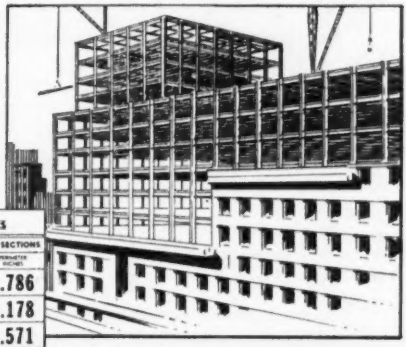
FOR A BETTER BOND

DIXISTEEL reinforcing bars meet ASTM A305 specifications

DIXISTEEL Reinforcing Bars are designed to meet the exacting specifications of ASTM A305. The diamond pattern deformations are of proper height and precisely spaced and angled to provide the greatest bond between the steel and concrete.

Because of the greater bonding strength of the A305 bar, higher bonding stresses are permissible, hook anchorage is practically eliminated, splice laps greatly reduced. The result is stronger structures, less steel, less labor and lower costs.

The best bars cost no more. Always specify DIXISTEEL Reinforcing Bars.



STANDARD A305 REINFORCING BARS

SIZES NEW NUMBERS	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS — ROUND SECTIONS DIAMETER INCHES	CROSS SECTIONAL AREA SQ. INCHES	PERIMETER INCHES
2	.167	.250	.05	.786
3	.376	.375	.11	1.178
4	.668	.500	.20	1.571
5	1.043	.625	.31	1.963
6	1.502	.750	.44	2.356
7	2.044	.875	.60	2.749
8	2.670	1.000	.79	3.142
9	3.400	1.128	1.00	3.544
10	4.303	1.270	1.27	3.990
11	5.313	1.410	1.56	4.430

Atlantic Steel Company

ATLANTA, GEORGIA

ROADS, STREETS, BRIDGES

	December, 1951 Contracts Awarded	Contracts to be Awarded	Contracts Awarded Twelve Months 1951
Ala.	$ 1,770,000	$ 648,000	$ 27,865,000
Ark.			10,729,000
D. C.		1,200,000	874,000
Fla.	3,017,000	4,740,000	79,835,000
Ga.	8,746,000	1,440,000	32,192,000
Ky.	2,437,000	1,490,000	29,536,000
La.	6,514,000	4,145,000	51,753,000
Md.	4,772,000	1,100,000	43,067,000
Miss.	115,000	300,000	22,921,000
Mo.	5,615,000	5,410,000	30,282,000
N. C.	4,444,000	594,000	55,055,000
Okla.	5,564,000	660,000	37,611,000
S. C.	282,000		23,440,000
Tenn.	2,970,000	2,620,000	20,614,000
Tex.	10,169,000	5,198,000	121,236,000
Va.	1,820,000	1,610,000	36,354,000
W. Va.			8,486,000
TOTAL	$58,235,000	$31,147,000	$625,545,000

PUBLIC BUILDING

(City, County, State, Federal; Schools)

	December, 1951 Contracts Awarded	Contracts to be Awarded	Contracts Awarded Twelve Months 1951
Ala.	$ 2,209,000	$ 3,450,000	$ 34,042,000
Ark.	976,000	360,000	12,367,000
D. C.	225,000	2,294,000	27,104,000
Fla.	4,106,000	2,980,000	50,939,000
Ga.	1,898,000	5,775,000	43,772,000
Ky.	22,701,000	545,000	34,652,000
La.	6,479,000	3,425,000	50,266,000
Md.	3,516,000	36,263,000	101,159,000
Miss.	930,000	2,550,000	18,687,000
Mo.	890,000	1,410,000	17,775,000
N. C.	2,841,000	2,550,000	88,936,000
Okla.	697,000	565,000	8,022,000
S. C.	1,406,000	2,720,000	27,768,000
Tenn.	150,000	1,180,000	36,027,000
Tex.	9,086,000	41,198,000	141,085,000
Va.	3,454,000	4,780,000	111,073,000
W. Va.		70,000	6,385,000
TOTAL	$61,558,000	$112,115,000	$810,059,000

PRIVATE BUILDING

(Assembly, Commercial, Residential, Office)

	December, 1951 Contracts Awarded	Contracts to be Awarded	Contracts Awarded Twelve Months 1951
Ala.	$ 4,882,000	$ 3,550,000	$ 59,191,000
Ark.			10,116,000
D. C.	5,350,000	2,760,000	9,148,000
Fla.	7,124,000	5,316,000	153,641,000
Ga.	1,006,000	6,075,000	62,971,000
Ky.		530,000	14,936,000
La.	2,278,000	5,586,000	68,945,000
Md.	5,691,000	545,000	112,095,000
Miss.	165,000	792,000	13,944,000
Mo.	495,000	450,000	68,149,000
N. C.	3,273,000	930,000	54,498,000
Okla.		750,000	630,000
S. C.	828,000	15,030,000	46,770,000
Tenn.	190,000	250,000	75,206,000
Tex.	8,897,000	16,272,000	181,074,000
Va.	517,000	849,000	63,874,000
W. Va.			465,000
TOTAL	$40,696,000	$59,685,000	$995,653,000

PUBLIC ENGINEERING

(Dams, Drainage, Waterworks, Sewers, etc.)

	December, 1951 Contracts Awarded	Contracts to be Awarded	Contracts Awarded Twelve Months 1951
Ala.	$ 1,588,000	$ 1,947,000	$ 36,088,000
Ark.	1,439,000	300,000	10,580,000
D. C.	105,000	470,000	3,697,000
Fla.	5,283,000	10,911,000	108,051,000
Ga.	316,000	2,270,000	36,758,000
Ky.	712,000	230,000	6,161,000
La.	2,131,000	3,790,000	50,688,000
Md.	6,204,000	1,006,000	24,211,000
Miss.	1,371,000	3,212,000	36,504,000
Mo.	2,031,000	2,056,000	25,620,000
N. C.	1,012,000	840,000	133,388,000
Okla.	1,422,000	258,000	15,465,000
S. C.	2,260,000	247,700,000	20,474,000
Tenn.	10,582,000	1,655,000	52,373,000
Tex.	14,406,000	26,921,000	184,869,000
Va.	3,814,000	1,525,000	60,850,000
W. Va.		200,000	245,000
TOTAL	$54,676,000	$305,291,000	$805,417,000

INDUSTRIAL

	December, 1951 Contracts Awarded	Contracts to be Awarded	Contracts Awarded Twelve Months 1951
Ala.	$ 283,000	$ 11,529,000	$ 141,701,000
Ark.		35,000	107,774,000
D. C.	165,000	250,000	165,000
Fla.	248,000	1,300,000	116,589,000
Ga.	109,000	235,000	47,190,000
Ky.	1,300,000	22,828,000	442,445,000
La.	369,000	109,558,000	199,463,000
Md.	1,275,000	15,254,000	117,419,000
Miss.	1,259,000	179,000	63,451,000
Mo.	1,012,000	200,000	37,478,000
N. C.	450,000	39,800,000	19,816,000
Okla.	50,000	300,000	24,474,000
S. C.	117,000	350,000	377,674,000
Tenn.	100,000	4,431,000	40,039,000
Tex.	5,474,000	81,057,000	482,956,000
Va.	52,000	350,000	28,668,000
W. Va.	12,136,000	500,000	49,681,000
Total	$24,390,000	$288,156,000	$2,296,183,000

South's Contracts at Record Peak

(Continued from page 49)

here exceeded 100,000,000 tons.

The vast production, equal to almost one-third of the tonnage made in this country during recent war years, was several times the amount needed for the defense mobilization program. Most of the output was for uses normally regarded as part of the civilian economy, the Institute stated.

Producing one billion tons since 1940, the steel industry has not reached its peak. Annual steel capacity is rising toward an expected 120,000,000 tons

SPEED COMPLETIONS...

SPECIFY LACLEDE STEEL JOISTS

for Floor & Roof Construction and Roof Purlins

- NO ALLOCATION NEEDED... JOISTS ARE NOW A CLASS 'B' PRODUCT.
- AVAILABLE FOR PROMPT SHIPMENT FROM OUR ENLARGED MILL FACILITIES.

By using steel joists for roofs and floors you can aid in conserving critical steel for construction and help speed your job to completion.

A class 'B' product that needs no allocation, Laclede Steel Joists are available for prompt delivery from our expanded mill facilities.

Framework of Robert Art. School, St. Louis, Mo. • V. Harry Rhodes, Commissioner of School Buildings • Contractor: Juengel Construction Company

HELP CONSERVE STEEL

Write for information on the complete line of Laclede Quality steels for construction.

LACLEDE

Producers of Steel for Industry and Construction

LACLEDE STEEL COMPANY

St. Louis, Mo.

sometime in 1953. Capacity at the start of 1952 is set at about 107,000,000 tons.

In the first half of 1952 the steel industry expansion and improvement will raise the total annual capacity more than 650,000,000 tons, followed by an increase of more than 4,000,000 tons in the last half and over 2,000,000 tons in 1953, according to present schedules.

Cost Index Stable

On the subject of costs, the Austin Company said that the year-end level held to the same index figure as that prevailing in the first quarter of 1951. Sharp increases in basic wage rates and upsets in regional labor markets may be serious threats to the current stability.

Concern about wage increases has already been reflected in the growing number of requests by manufacturers and suppliers for escalation clauses, usually with limits of 10 to 15 per cent, says George A. Bryant, the Austin company president.

He also points out that six- and seven-day schedules introduced on some very large government projects have already driven other contractors within a 200-mile range to overtime, solely because it offered the only means of attracting the required number of men in certain skilled trades.

VIRGINIA PROJECTS

(Continued from page 29)

has contract at $80,438 for main office and laboratory building, Tidewater Field Station.

LANGLEY FIELD — National Advisory Committee on Aeronautics received low bid from Virginia Engineering Co., 80—29th St., Newport News, at $652,000, for general excavation, piling and concrete foundations, Unitary Plan 4x4-foot supersonic tunnel, office and laboratory, Langley Air Force Base.

MECKLENBURG COUNTY—Corps of Engineers let contract to Wiley N. Jackson, Roanoke, Va., at $2,120,855, for relocation—U.S. Hwy. 58, east of Clarksville, Buggs Island Reservoir Project.

MECKLENBURG COUNTY—Corps of Engineers received low bid of $116,113 from Charles B. Stephens & Co., Inc., Morristown, for relocating Southern Railway, Jeffress to Clarksville, Va.

NORFOLK—Navy Dept., Public Works Office, let contract to Sesco Contractors, Dallas, Tex., at $598,409, for turbo-prop engine test cells, U. S. Naval Air Station.

NORTHWEST—Navy Dept., Public Works Office, received low bid from Sesco Contractors, Dallas, Tex., at $1,994,514, for radio receiving facilities, U. S. Navy Communication Station.

PETERSBURG—Virginia State College received low bid of $529,363 from English Construction Co., Altavista, for Luther Hilton Foster Hall students' activities building.

RICHMOND—A. F. Barnette, Mechanicsville, has contract at $59,660 for additions and alterations to Training Center.

RICHMOND — City Council sold $3,140,000 bond issue for public improvements to syndicate represented locally by F. W. Craigie & Co.

WILLIAMSBURG — Dow Chemical Co., Texas Div., Freeport, Tex., has acquired a 600-acre tract near Williamsburg for possible erection of plant.

WEST VIRGINIA

CHARLESTON—Atlantic Seaboard Corporation requests Power Commission to approve plans for four new compressor stations on its 26-inch main gas pipeline on Atlantic's main line between Cobb, W. Va. and Rockville, Md. in Braxton, Upshur, Pendleton and Hardy counties, West Virginia.

INSTITUTE—Union Carbide and Carbon Corp. let contract to Ford, Bacon & Davis, 39 Broadway, New York, N. Y., at $11,000,000 for design and construction of a coal hydrogeneration plant.

MORGANTOWN — House Armed Services Committee approved lease of Morgantown Ordnance Works to Mathieson Chemical Corp., Baltimore, Md.; under terms of new lease, Mathieson proposes to expend $4,867,000 for rehabilitation.

RED JACKET—Red Jacket Coal Corp. let contract to Roberts and Schaefer Co., 130 N. Wells St., Chicago, for a tipple washery and carbon coal processing plant, $756,173.

SHARPLES — Boone County Coal Corp., William J. Clothier, Pres., plans renovation to tipple and equipment of an existing facility; work includes new washing and screening facilities with necessary changes to structure, cost approximately $200,000; McNally Pittsburgh Manufacturing Corp., engineering and also will supply all of the material and do the field erection.

SOUTH CHARLESTON—Carbide & Carbon Chemicals Co., a division of Union Carbide & Carbon Corp., starting construction of additional facilities for producing a plasticizer needed for military and defense purposes.

SUMMERSVILLE—Peters Creek Coal Co., James D. Ireland, Pres., Farmers & Merchants Bank Bldg., let contract to Roberts & Schaefer Co., Chicago, Ill., for a second super airflow cleaning unit for minus ¾ inch coal; $80,000 authorization.

N.S.P.E. Professional Unity

(Continued from page 30)

tion of the professional engineer's service to his community, but will provide a procurement information service for the private citizen and officials of the community, state and national governments.

N.S.P.E., with professionalism, public service and unity of the engineering profession as its goal, looks forward to ever increasing usefulness to the public and the profession.

They that can give up essential liberty to obtain a little temporary safety deserve neither liberty nor safety.

—Benjamin Franklin

It pays to wait for

DICKEY CLAY SEWER PIPE

Here is how to prevent bills for sewer replacement. Specify Dickey vitrified salt-glazed clay pipe. It offers you a *50-year written guarantee* against damage by trade wastes* and sewer gases. There are many sewer pipes, but no substitute for Dickey Pipe. It's worth waiting for.

If it's made of clay it's good . . . if it's made by Dickey it's better

*With the exception of hydrofluoric acid, seldom, if ever, found in sewage.

Dickey Clay Pipe
ALWAYS IN DEMAND

W. S. DICKEY CLAY MFG. CO.
KANSAS CITY 6, MO.
BIRMINGHAM 1, ALA. • CHATTANOOGA 2, TENN.
SAN ANTONIO 7, TEX. • TEXARKANA, TEX.-ARK.

Record A.E.D. Meet Slated at Chicago

(Continued from page 5)

program by E. F. Longinotti, vice-president of the Union Planters National Bank & Trust Co., Memphis, Tenn., who will discuss equipment financing. The final scheduled speaker will be Business Economist John D. Corrigan, who will discuss the problems of the sales executive.

Ample time for audience participation has been provided at all sessions, and members are encouraged to direct questions to speakers and to open their own problems for floor discussion.

The Grand Ballroom of the Conrad Hilton (Stevens) will again be opened for manufacturer-distributor contacts on Tuesday morning. Because of the importance of the manufacturer-distributor conferences, the entire Tuesday program has been left open, and time has been provided on Wednesday afternoon, following the Installation Luncheon.

Officer Election Slated

The session on government affairs, scheduled for Wednesday, January 30, promises to be one of the best of the convention. The election of A.E.D. officers for 1952 will be the first item of business on the program. The government affairs discussion will open immediately after the election with a pace-setting speech by Milton Rosen, St. Paul, Minn., immediate past-president of American Public Works Association and commissioner of public works for St. Paul.

Directly following Mr. Rosen's address, four government officials will take the stand to answer questions from the members. The officials, including O.P.S. representatives Archie Stone and Arthur Loder, N.P.A. construction machinery division chief, Mike Garber, and his assistant, Charles Haring, will each give short summary talks before the questioning begins. A panel composed of A.E.D. officers and key members of the National Affairs Committee will open the questioning. Floor microphones will be provided to facilitate questioning from the floor.

Benson Presides Wednesday

A.E.D. Vice-President J. A. Benson will preside over the Wednesday session. The discussion period will be moderated by Joseph T. King, A.E.D. Washington representative.

The traditional and colorful Installation luncheon will be held following the Wednesday business session. New A.E.D. officers will be sworn in by Past President W. A. Danner, Parker-Danner Co., Hyde Park, Mass.

W. E. Miles of the Oliver Corp., chairman of the manufacturers' convention suggestion committee, will preside over the Thursday, "Manufacturers' Day," session. Julian R. Steelman of the Koehring Company, Milwaukee, president of the Construciton Industry Manufacturers Association, will be the first speaker with an address entitled, "The Manufacturer and You in 1952."

Dwight W. Winkelman, Syracuse, N. Y., A.G.C. past president, will follow Mr. Steelman with an address entitled, "The Construction Outlook for '52." Brig. Gen. John R. Hardin, assistant chief of engineers for military construction, Corps of Engineers, will also attempt to forecast the coming year, this time from the military standpoint, with an address "Military Construction Outlook for 1952 from the Point of View of the Corps of Engineers." The final address will be given by Harold Hess, C.I.M.A. executive vice-president, who will discuss what manufacturers are doing for the industry.

Admiral Zacharias to Talk

Rear Admiral Ellis M. Zacharias, USN, retired, author of the best-sellers, "Secret Mission" and "Behind Closed Doors" will be the keynote speaker at the last official function of the 33rd Annual Meeting, the farewell luncheon. The Admiral is rated as one of the most informative speakers in the country by many who have heard him. Julian R. Steelman will serve as toastmaster of the luncheon.

The social program of the convention will open with the Early Birds' Breakfast, given in honor of President Arnold on behalf of the members of Region XIV, at 8:30 a.m. on Monday, January 28. The President's Reception, which will enable members to meet their president and officers, will be held in the assembly room and Normandy Lounge on Monday evening.

The Annual Birthday Party, climax of the social events, will be held in the Grand Ballroom on Tuesday evening. The birthday party is given in honor of President Arnold on behalf of the entire association.

Kentucky Road Bids Total Almost $1,325,000

Bids totaling almost $1,325,000 were opened last month by the Kentucky Department of Highways. Included were projects in the following counties:

Barren—6.812 miles grading, drainage and trafficbound limestone, Temple Hill-Ritters Mill-Monroe Line Road, S 296 (1); RS 5-712, Marlowe Construction Co., Lexington, $114,193.71;

Barren—4.565 miles grading, drainage and trafficbound limestone, S 299 (1) RS 5-372, Kentucky 90, Metcalfe County Line Road, Marlowe Construction Co., Lexington, $40,959.66;

Carlisle-Graves — 9.108 miles grading, drainage and bank or river gravel, F 509 (4); SP (20-124) (42-408), Mayfield-Wickliffe Road, Davidson & Cocke, Mayfield, Ky., $250,923.42; R. B. Potashnick, Cape Girardeau, Mo., low on trafficbound limestone and river gravel;

Garrard—3.502 miles grading, drainage and traffic build limestone, S 366 (1); SP 40-146, Lancaster-Nicholasville Road, Lovell & Hart Construction Co., Lexington, $127,854.53;

Hardin—4.953 miles grading, drainage and trafficbound limestone, S 36 (2); RS 47-219, U. S. 62-Eastview-Solway-Hardin Springs Road, Fount Crow, Ltd., Beaver Dam, Ky., $65,154.20;

McCracken—.601 of a mile of grading, drainage and cement concrete pavement, U 58 (8); SP 73-332, Paducah Belt Line Relief Route, Traylor Brothers, Inc., Evansville, Ind., $247,453.60;

Muhlenberg—2.75 miles grading, drainage and trafficbound limestone, S 227 (1); RS 89-683, Kentucky 181-Rosewood-Dunmor Road, Swinney Brothers, Kirkmansville, Ky., $23,059.25;

Pike—1.941 miles grading, drainage and local bank or creek gravel, slab, S 20 (3); SP 98-623, Kimper-Meta Road, Lovell & Hart Construction Co., Lexington, $84,030 on local bank or creek gravel;

Shelby—S 297 (2); SP 106-6, .147 of a mile of bridge and cement concrete pavement approaches, S 297 (2); SP 106-6, Shelbyville-Eminence Road, Saltsm: Construction Co., Bardstown, Ky., $118,-381;

Bullitt — SP 15-74, bridge sidewalk, Shepherdstown-Lebanon Junction Road, T. C. Pitman, Hodgenville, Ky., $12,703.55;

Perry—SP 97-282 (CAA 9-15-003-002), bridge to airport near Hazard over North Fork of Kentucky River, I-beam span using 10-inch steel piles, Saltsman Construction Co., Bardstown, Ky., $48,586.55;

Pike—.142 of a mile of grading, drainage and bituminous surface Class I (limestone aggregate), Winston Ford Co., Prestonsburg, Ky., $31,802.89;

Fleming—.796 of a mile of reconstruction and trafficbound limestone, RS 35-590, Mt. Pleasant Road, C. D. Juett, Winchester, Ky., $7,026.90;

Jefferson—.935 of a mile of reconstruction and bituminous surface Class I waterbound base, RS 56-428, Lee's Lane Road, Highland Company, Inc., Louisville, $51,290;

Lee — Repairs to Congleton-Idamay-Arvel Road bridge over Sturgeon Creek, RS 65-89, H. de B. Forbes & Son, Richmond, $4,744.87;

Trigg — 2.014 miles of reconstruction and trafficbound limestone, RS 111-594, Lyons & Breeden, Rogersville, Ky., $69,-532;

Webster — 1.345 miles reconstruction and trafficbound limestone, RS 117-909, Montezuma-Oyama Road, Edward J. Carlisle, Madisonville, Ky., $11,522.60;

Webster — 1.112 miles of reconstruction and trafficbound limestone, RS 117-949, Kentucky 85, Old Baptist Hill Road, Edward J. Carlisle, Madisonville, $12,-961.90.

Memphis Building Active

(Continued from page 39)

LeBonheur Children's Hospital that will be completed soon at an estimated cost of $1,588,857.

A progressive city in a strategic location, Memphis' future looms brighter and brighter. The amazing efforts of the construction industry, that has provided housing for the thousands of new residents, and new and growing businesses, will continue to build a greater Memphis.

Liberty exists in proportion to wholesome restraint; the more restraint on others to keep off from us, the more liberty we have.

—Daniel Webster

White Front End Loaders Have Extensible Booms

The extending boom feature of White Loaders is highly commended by all users. It permits loading trucks without hand spreading or coming close to truck body. Can fill high bins or extend over walls.

Bucket is close to wheels when loading. At top it moves forward to discharge 2½' ahead. Can be dumped at any point in lift.

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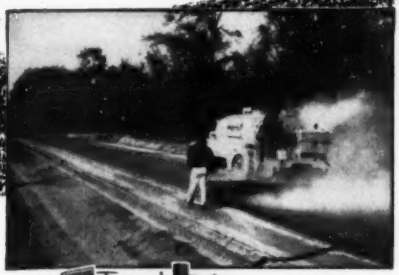

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S.A.S.H.O. Meet at Charleston

(Continued from page 33)

wide dealer organization and, through it, the general public, for sound highway programs.

Mr. Felts stressed the essential role of transportation in the defense program and outlined what the transportation situation would be in case of attack.

He said no authorities would attempt to guess the form of any enemy attack on this country, because such attack was certain to be a surprise. He emphasized that the entire United States is subject to attack, and that non-industrialized areas as well as industrialized areas may be attacked in order to make the best of the element of surprise warfare. He termed Civil Defense as merely an "insurance policy," and said this country could not afford to be without an adequate Civil Defense program.

The importance of transportation in Civil Defense can be easily overlooked, he said. It now falls far short of requirements in case of national disaster. It is in need of greater leadership. Of the three main types of motor vehicle transportation—bus, truck, and automobile—the automobile would be of the least importance in case of attack. He pointed to one large city's defense plan which prohibited the use of automobiles except by authorized persons in case of surprise enemy attack. Experience in other countries has shown that the uncontrolled use of automobiles hindered the movement of essential transportation.

He said the most important problem to consider in case of attack is traffic control. He said that types of traffic to be considered in such controls were long distance, potential emergency civil defense traffic, and military traffic. Panic traffic would be the real problem. In any plan of control, he suggested the establishment of primary and alternate routes. Further, he added, the program must provide for mutual aid and mobile support. In this respect, he said, residents of nearby communities should pool their resources. Mobile support forces should be available for dispatch to areas where aid is needed.

No community, he continued, could afford to establish a self-sufficient civil defense force. A sound approach is to have the states utilize their existing facilites and have the federal government provide the mobile support needed, as the mobile support groups would be in position to move through several states as necessary. He added that without a well designed and well thought out plan, Civil Defense would fail, and urged all those present to give Transportation, "the key to civil defense," its proper place in the program.

Record Volume Revealed by Rust Engineering

Activities of the Rust Engineering Co. during 1951 represented the highest volume of business in the 47-year history of the company, according to S. Murray Rust, Jr., president of Rust and subsidiary companies, of Pittsburgh, Pa., and Birmingham, Ala.

The record volume of construction projects, both completed and under contract, included work on a wide variety of industrial facilities for producing cement, lumber, catalyst, electric lamps, bricks, paper, felt, steel, and superphosphate.

In addition, projects for the service industries ranged from grocery warehouses and facilities for handling and storage of iron ore to plants for sewage and water treatment, including industrial waste treatment and disposal.

Rust, with its subsidiary companies, was also actively engaged on governmental projects concerned with the national defense—projects involving a metal reduction plant to be operated for the Atomic Energy Commission; the atomic energy naval reactor; the nation's largest jet engine test facility at Tullahoma, Tenn., and perhaps the country's largest gas dynamics laboratory (for study of aerodynamic phenomena encountered in extremely high-speed flight) at the Langley Aeronautical Laboratory in Virginia.

In the chemical field, Rust was made engineer-constructor of the new $10,000,000 phosphate chemicals plant being built at Bonnie, Fla., for International Minerals and Chemical Corp. A subsidiary, the Rust Process Design Co., is also handling process design for the new plant in conjunction with International's engineers.

Work was continued on the major expansion program of American Viscose Corp. at Front Royal, Va., as well as facilities for doubling capacity of the Armour Fertilizer Works, at Bartow, Fla.

Rust also began a $3,000,000 project for alterations and additions to the Bridgeville, Pa., chemical plant of American Cyanamid Co., and a $150,000 soap acidulation plant for whole tall oil production at Crossett, Ark., for Crossett Chemical Co.

With its subsidiary, the Rust Process Design Co., Rust began construction of a new catalyst plant at Weeks, La., for Bay Chemical Co., a division of Morton Salt Co.

The process design subsidiary also placed in operation a new tall oil deodorizing unit at the Covington, Va. tall oil plant of West Virginia Pulp and Paper Co.

Work was carried forward on the major expansion project of Hollingsworth and Whitney Co., at Mobile, Ala.; Crossett Paper Mills at Crossett, Ark.; and the West Virginia Pulp and Paper Co. at Covington, Va.

The new 150-ton per day soda recovery plant was completed for the New York and Pennsylvania Co. at Johnsonburg, Pa.; and work was underway to double the daily capacity of Bird & Son's Shreveport, La., felt mill. The latter mill was completed by Rust early in 1950 and provisions were made during construction for this expansion.

Also underway was work on the $5,800,000 expansion project of the Halifax Paper Co. at Roanoke Rapids, N. C.

Rust began a $1,225,000 project for Crucible Steel Co. of America at its Midland (Pa.) Works where it was installing two new boilers, razing six Rust boilers in use since 1905 to provide space for the new units. Plans were also underway for installation of a new high pressure boiler at Weirton, W. Va. for the Weirton Steel Co.

A $1,500,000 project was underway for Connors Steel, division of H. K. Porter Co., Inc., at its Birmingham mill. The work involves engineering and installation of a new electric furnace, a billet heating furnace, and additional rolling facilities.

Work was completed on Jones and Laughlin Steel Corporation's tin plate department expansion program at its Aliquippa (Pa.) Works. By year's end Rust had also substantially completed new facilities to neutralize waste pickle liquor for U. S. Steel Company at its Irvin Works.

Well underway was the new multi-million dollar expansion program of Granite City Steel Co., at Granite City, Ill., which includes construction of three new open hearth furnaces, a blooming mill, three new slab heating furnaces, and alterations to the hot strip mill. As constructor, Rust is handling engineering and design of the three new slab heaters through a subsidiary, the Rust Furnace Co.

Among domestic contracts of Rust Furnace Co. for design and construction were four continuous slab heating furnaces for the new strip mill of U. S. Steel Company's Fairless Works, Morrisville, Pa.; two slab heaters for Pittsburgh Steel Company's new 66-inch hot strip mill at Allenport, Pa.; a new slab heating furnace for Ford Motor Company's steel division at its Rouge plant; a car-type furnace for Chicago Bridge and Iron Co.

During the year slab heating furnaces were completed for: the Stanley Works at Bridgeport, Conn.; Detroit Steel, at Portsmouth, Ohio; and Inland Steel Company's Indiana Harbor works.

Three slab reheating furnaces were under modernization for Republic Steel Corp. at its Corrigan McKinney Works, and six new batteries of 3-hole soaking pits were underway at the Indiana Harbor Works of the Youngstown Sheet and Tube Co.

Canadian contracts with Rust Furnace Co. included a new slab heating furnace for Steel Company of Canada, Ltd., at its Hamilton (Ontario) Works; and a new billet heating furnace and three complete batteries of soaking pits for the Algoma Steel Corp., Ltd., at Sault Ste. Marie, Ontario.

Abroad, design and engineering were substantially completed for two slab heaters and two ingot heating furnaces for Italian mills, while two continuous slab heaters and a rotary hearth furnace were nearly finished for the Fiat plant at Torino, Italy. Rebuilt and new slab heating furnaces were also in progress for

(Continued on page 57)

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Dallas Building Pace

(Continued from page 38)

ect, and the Clearview center, built at a cost of $250,000.

Work started in April on the 20-story Fidelity Union Life Insurance Building, which will cost $5,000,000. Also in April, National Production Authority approval was given the Gibraltar Insurance Building, a proposed 11-story office structure.

The 100,000-square-foot plant of the National Container Corporation of Texas was completed in October. It was built at a cost of $600,000.

Stokely Foods, Inc., plans a $1,000,000 plant with 41,700 square feet of production area and 40,000 square feet of warehouse space. Other plants on tap for the near future are the $500,000 Goodrich rubber plant, the $105,000 Storm Vulcan, Inc., plant and the $66,000 Commercial Metals plant.

Business observers and investors declare the continued building in Dallas to be amply justified by the region's rapid and economically sound growth, and predict a larger scale of building in the years ahead.

In the final analysis, buildings are but a reflection of people and their activities . . . and the trend of people is to Dallas, which will mean continued building.

U. S. Steel Names Asst. V.-President

J. Donald Rollins has been appointed assistant vice president of engineering, United States Steel Co., it has been announced by John L. Young, vice president of engineering. Mr. Rollins has been serving as project manager of the company's Fairless Works in Morrisville, Pa., supervising construction plans of the new U. S. Steel plant.

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A native of Pittsburgh, Mr. Rollins attended Carnegie Institute of Technology. In 1934 he began with U. S. Steel as a draftsman in the Pittsburgh engineering department of the American Sheet and Tin Plate Co. Three years later he was transferred to the engineering department of Carnegie-Illinois' Gary, Ind., Works.

Mr. Rollins advanced to become project engineer, assistant chief engineer, and in 1948 was made chief engineer of Gary Works. That same year he returned to Pittsburgh to be planning engineer for Carnegie-Illinois. In 1950 he became the company's assistant chief engineer.

Mr. Rollins is a member of the American Iron and Steel Institute and the Association of Iron and Steel Engineers.

Chester S. Allen Dies

Chester S. Allen, 70, who prior to his retirement in 1950, was president of Lockwood Greene Engineers, Inc., architects and engineers of Boston, New York, Spartanburg, S. C. and Montreal, died January 6 at Auburndale, Mass. His firm is widely known in the textile and general industrial field.

Huntington Construction Includes 19 Projects

Nineteen buildings and construction projects have been recently finished or are now under way in the Huntington, W. Va. area, according to an announcement by Don Baker, manager of the local chamber of commerce.

Among the completed and practically finished structures are the Atomic Energy Commission building; J. C. Penney building; R. F. Steiner building; state hospital expansion; west junior high school gymnasium; First Presbyterian Church addition; Northcott College remodeling at Marshall College, and the 32-unit Washington Arms apartments.

Currently active are the Huntington airport and the airport access road; $750,000 Huntington Galleries; Highland Baptist Church addition; Sylvania Electric Corp. expansion of oxygen facilities; Huntington Trust and Savings Bank addition; two 750,000-gallon storage tanks for Texas Company; electric furnace and building for West Virginia Steel Corp.; municipal sewer system expansion and Altizer school addition.

Bids are yet to be received for the new Walnut Hills junior high school. Plans are expected to be ready for this project early in March.

Continental Oil Plans Second Ponca Expansion

Continental Oil Co. will spend approximately $7,500,000 on an expansion program in its Ponca City, Okla., refinery, largest of the company's eight plants, announces President L. F. McCollum.

Construction of the new facilities, which will include advanced design refining equipment, a lubricating oil additives plant and electric power plant equipment, will be started in the late Spring. The job will require about 18 months for completion.

"The $7,500,000 we are spending to expand our Ponca City refinery is one more step in Continental's long-range program of growth," Mr. McCollum said.

"We have plans and ideas on hand for greater expansion of many phases of Conoco's operations, involving the investment of many more millions of dollars, and affecting favorably many areas in which Continental Oil Co. is active."

Major project in the Ponca City refinery expansion will be installation of new coking equipment of the continuous contact type at a cost of approximately $3,550,000. This process will make it possible to produce overall gasoline of substantially higher octane rating while contributing to oil conservation by extracting more refined products from every barrel of crude oil, Mr. McCollum pointed out.

Also scheduled for installation at the Continental plant is an electric turbine generator, a high-pressure steam boiler and auxiliary equipment for the power plant.

Another $2,000,000 will be invested in a lubricating oil additives plant.

"The new lubricating oil additives plant is being built in order that Continental will be able to meet most economically the increasing demand for heavy-duty motor oils," Mr. McCollum explained.

The expansion project announced, the second major construction job at the Ponca City refinery since 1948, brings to more than $15,000,000 the investment Continental has recently made in refinery expansion and improvement in this plant.

Anadarko Power Plant Under Construction

Construction is proceeding according to schedule on the new plant of Western Electric Cooperative of Anadarko, Okla. Laramore and Douglass, Inc., of Chicago.

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GENERAL CONTRACTORS
NEWPORT NEWS, VIRGINIA

are the engineers, and E. E. Farrow Co. of Dallas, Tex., the contractors for construction. The plant will be finished next December.

Belton Dam Continues

(Continued from page 40)

However, one of the most important aspects of the Belton Reservoir to Central Texas will be the fact that it may serve this area as an additional source of water supply for its ever-increasing municipal, industrial, and agricultural needs. By hoding back otherwise destructive flood waters and utilizing them when other supplies are low, the project will play in important part in the continued growth and development of Central Texas.

Record Volume Revealed by Rust Engineering

(Continued from page 54)

mills in South Africa and Brazil.

Construction was begun on Westinghouse Electric Corporation's new lamp manufacturing plant near Reform, Ala., and two new brick (refractories) plants were underway at Windham, Ohio, and Fairfield, Ala., for Harbison-Walker Refractories Co.

A $215,000 initial contract was being handled by Rust in the modernization program of the W. T. Smith Lumber Co. at Chapman, Ala.; and cement storage facilities were increased by 75,000 barrels at San Andreas, Cal., with the completion of four cement storage silos for the Calaveras Cement Co.

For the Kroger Company, Rust completed a combination warehouse and office building at Atlanta, Ga., and one at Pittsburgh, Pa., while another at Nashville, Tenn. was scheduled for completion early this year.

In addition to many boiler settings in its specialty fields of industrial chimney and boiler setting design and construction, Rust was active on design, construction, or restoration of 145 reinforced concrete and radial brick chimneys in North and South America during 1951.

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Agency—Hosler Advtg. Inc.

—H—

HAMPTON ROADS TRACTOR CO. (N State Group) ..... —
HARNISCHFEGER CORPORATION ..... —
Agency—The Buchen Company
HENDRIX MANUFACTURING CO., INC. .. —
Agency—Svolos Advtg. Agency
HERMITAGE PORTLAND CEMENT CO. 8
Agency—George H. Hartman Co.
HOOVER EQUIPMENT CO. (W State Group) 15
Agency—Lowe Runkle Co.
HUBER MANUFACTURING COMPANY 27
Agency—Jay H. Maish Company
HUNT & SONS, J. B. (C State Group) 18B
HUNT MACHY. CO., JEFF (C State Group) 18C
HUNT OIL CO. (S State Group) 15

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INDEPENDENT PNEUMATIC TOOL CO. .... —
Agency—Connor & Watson
INSLEY MFG. CO. (N State Group) ..... —
Agency—A. L. Perkins & Co.
INTERNATIONAL HARVESTER CO. 6, 7
Agency—Leo Burnett Co., Inc.

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JOHNSON CO., C. S. (N State Group) ..14, 15
Agency—Andrews Agency, Inc.
JUNALUSKA SUPPLY CO. 57

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KOEHRING CO. (N State Group) 14, 15
Agency—Andrews Agency, Inc.
KOPPERS CO., INC. (W State Group) 18
Agency—Batten, Barton, Durstine & Osborn
KWIK-MIX CO. (N State Group) 14, 15
Agency—Andrews Agency, Inc.

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Agency—Batz-Hodgson-Neuwoehner Advtg. Agcy.
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(N State Group) 18B, 18C
(C State Group) 14, 15
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Agency—Jaap-Orr Co.
LOUIS CO., INC., JOHN C. (N State Group) ..... —
LUCEY BOILER & MFG. CORP. ..... —
Agency—Power & Condon

—M—

M & G ARMATURE & GENERATOR SERVICE, INC. (N State Group) 18H
MARION POWER SHOVEL CO. 31
Agency—Jay H. Maish Co.
McCORMICK MACHINERY CO. (W State Group) 15
Agency—Lowe Runkle Co.
McGHAN PATENT SCAFFOLDING CO. (N State Group) 18G
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MITCHELL DISTRIBUTING CO. (C State Group) 14
(N State Group) 18C
Agency—Andrews Agency, Inc.
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NORTHWEST ENGINEERING COMPANY 3
Agency—Russell T. Gray, Inc.
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NO. 9786 56

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OCONEE CLAY PRODUCTS CO. ..... —
Agency—Mfr's. Promotional Service
OLIVER CORPORATION, INDUSTRIAL DIV. —
Agency—The Buchen Company
OSBORNE EQUIPMENT CO. (S State Group) 12

—P—

PARK TRACTOR CO., GEORGE (S State Group) 18G
PARSONS CO. (N State Group) 14, 15
Agency—Andrews Agency, Inc.
PATENT SCAFFOLDING CO. 2
Agency—Glenn Jordan-Stoetzel, Inc.
PENNSYLVANIA DRILLING COMPANY 56
Agency—Edward M. Power Co., Inc.
POWER EQUIP. CO. (C State Group) 18D
POWER EQUIP. CO. (S State Group) 18

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"QUICK-WAY" TRUCK SHOVEL CO. 23
Agency—Galen E. Broyles Co., Inc.

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ROSCO MFG. CO. (N State Group) ..... —
Agency—Foulke Agency, Inc.
RUTLEDGE OIL CO. (W State Group) 17
Agency—Batten, Barton, Durstine & Osborn

—S—

SEABROOK TRUCK & TRACTOR CO. (S State Group) 14
Agency—Bert S. Gittins
SHELLEY TRACTOR & EQUIP. CO. (S State Group) 18C
Agency—Hosler Advertising, Inc.
SHUNK MFG. CO. 48
Agency—Morgan Advertising Co.
SOUTH CAROLINA EQUIPMENT CO. (C State Group) 12
SOUTHERN EQUIP. SALES CO. (C State Group) ..... —
SOUTHERN LIGHTWEIGHT AGGREGATE CORP. (N State Group) 18G
(C State Group) 16
Agency—Cabell Eanes, Inc.
SQUARE DEAL MCHY. & SUPPLY CO. (S State Group) 14
Agency—Bert S. Gittins
STATEWIDE EQUIPMENT CO. (N State Group) 18B
Agency—Andrews Agency, Inc.
STATHAM MACHINERY & EQUIP. CO. (S State Group) 18G
SUMMERS ROAD MACHINERY CO. (C State Group) 18B
SYDNOR PUMP & WELL CO., INC. 53

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TINNEY DRILLING CO. 56
TOOL & SUPPLY CO. (N State Group) 18
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TRACTOR & MACHINERY CO., INC. (S State Group) 18E
TUCKER STEEL CORP. (S State Group) ... 18F
TYRONE ROCK PRODUCTS CO. (S State Group) 18D

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UNITED STATES STEEL EXPORT CO. 59
Agency—Batten, Barton, Durstine & Osborn
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Agency—Byer & Bowman
UNIVERSAL FORM CLAMP CO. 9
Agency—Ross Llewellyn, Inc.

—V—

VAN LOTT, INC. (C State Group) ..... —
Agency—Cox Advertising
VIRGINIA ENGINEERING CO., INC. 56

—W—

WELLMAN ENGINEERING CO. 55
Agency—Griswold-Eshleman Co.
WHAYNE SUPPLY CO., ROY C. 57
Agency—Zimmer-McClaskey Advertising
WHITE MANUFACTURING COMPANY 53
WILSON MCHY. & SUPPLY CO. (N State Group) 18C
Agency—Andrews Agency, Inc.

—Y—

YANCEY BROTHERS CO. (S State Group) 17

Tiger Brand Wire Rope

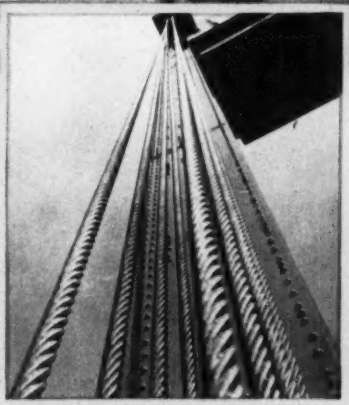
lifts largest single-plate girder span ever erected

WARD'S ISLAND LIFT BRIDGE for pedestrians connects Manhattan and Ward's Island.

● The Ward's Island Lift Bridge connecting Manhattan and Ward's Island is reputed to be the largest single-plate girder span ever erected. This is a pedestrian bridge spanning part of the East River. The center span is 312 feet 2¼ inches long and is designed for an 80-foot lift.

The main span weighs 375 tons and is hoisted by 32 U·S·S American Tiger Brand Wire Ropes 1⅛ inches in diameter. The ropes are prestressed 6 x 19 Monitor Steel with Fibre Core. This construction has the requisite strength combined with the proper flexibility to give long service.

On big jobs requiring utmost dependability, engineers choose a wire rope that has proved itself in service. That's why they select U·S·S American Tiger Brand so often. But whether your job is big or small, you can find a Tiger Brand Wire Rope designed to fit your needs. Let our wire rope specialists help you choose the Right Rope for your particular jobs.



CHAMPION WEIGHT LIFTERS Each of the 32 Tiger Brand Wire Ropes supporting the center span lifts 11.7 tons with plenty of excess strength for safety.

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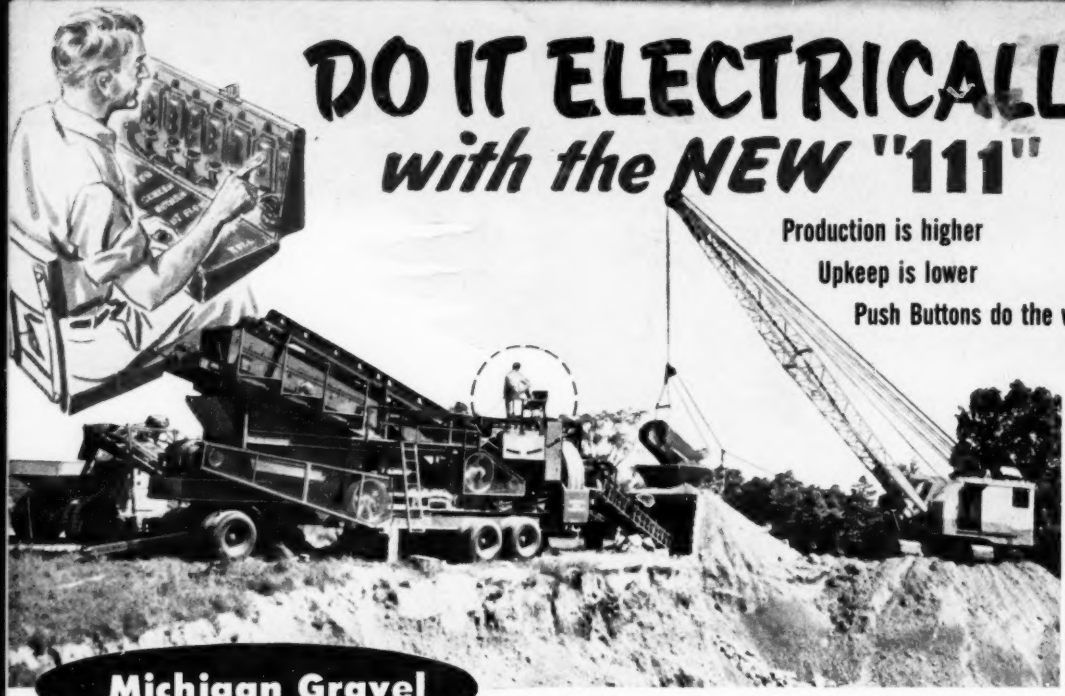
UNITED STATES STEEL

DO IT ELECTRICALLY
with the NEW "111"

Production is higher
Upkeep is lower
Push Buttons do the work

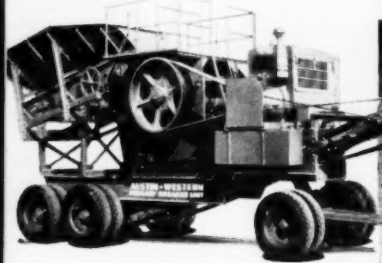


Michigan Gravel

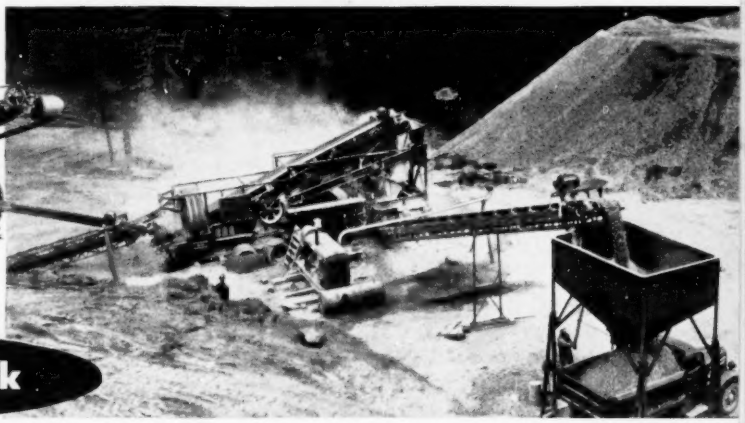
Production is higher—because each unit has its own electric motor drive; thus operates at top speed and efficiency at all times.

Upkeep is lower—because drives are simple and have few parts.

Push buttons do the work—the man on the platform starts and stops the feed and delivery conveyors, and has other units under complete control.



Primary Breaker units are made in several sizes; this one has a 3' x 10' apron feeder, 20" x 36" jaw crusher, power unit and delivery conveyor—all mounted on pneumatic tires.



Carolina Rock

The high production "111," with its 10" x 36" jaw and 40" x 24" roll crushers, is equally at home in gravel and rock. On this quarry job, production is still further increased by using a Primary Breaker unit with 32" x 40" jaw crusher (not visible in the photograph) to reduce the oversize to about 5 inches.

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